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Original Articles

THE DIAGNOSIS OF EXTRA-UTERINE PREGNANCY*

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In presenting the subject of extra-uterine pregnancy for your consideration, it is my desire not so much to present a scientific paper dealing with the debatable histological and pathological conditions leading up to the ectopic implantation of the impregnated ovum, nor yet to consider the many varied, but comparatively rare, conditions which such a pregnancy may assume, but, rather, to call your attention to the common and simple condition so generally met with clinically, and to emphasize the principal points in diagnosis appearing both before and after rupture.

It is a noteworthy, but regrettable, fact that the average text-book article, dealing exhaustively as it must with the rare, as well as with the common, forms of ectopic gestation, and elaborating the diagnostic points of the many and constantly changing conditions which this interesting accident may assume, tends to produce confusion rather than clearness and simplicity.

Both text-book and journal articles lay too much stress on the so-called classical symptoms of rupture—symptoms which all know and for which all are looking, and, because looking for them and exaggerating the frequency of their occurrence, many are allowing their cases of ruptured extra-uterine gestation to pass undiagnosed.

Practically every practitioner with whom I have discussed the subject of extra-uterine pregnancy, has referred to these classical symptoms of rupture—sudden, extreme pain, shock and collapse.

Gentlemen, if you make a diagnosis of ruptured extra-uterine pregnancy *only* when you have sudden, extreme pain, shock and collapse, you will fail to make a diagnosis in at least four out of five of your cases.

A few years ago it was my good fortune to have the somewhat unique experience of successfully operating upon six cases of ruptured extra-uterine pregnancy within a period of eight weeks. Every one of these women had been under the care of competent, well known practitioners, and yet but one of them was brought to me with a correct diagnosis.

Having previously had a fairly extensive experience in dealing with this not uncommon condition and, naturally, being constantly on the lookout for its occurrence, I had no difficulty, whatever, in making a correct and positive diagnosis in all these cases, and when their attention was called to the history, the symptoms and the physi-

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cal signs present, every one of these physicians was surprised that he, too, had not interpreted them correctly.

You may marvel as did they, at these failures in diagnosis and naturally ask for the reason. The answer is simple—the absence of those classical symptoms which our text-books have impressed upon us as diagnostic of ruptured extra-uterine pregnancy.

To make a diagnosis of extra-uterine pregnancy, either before or after rupture, as it is found in by far the great majority of cases, one point is absolutely essential—you must have extra-uterine pregnancy constantly in mind when considering all obscure pelvic and abdominal conditions.

The statistics of von Schrenck show a correct diagnosis in but two hundred and twenty-one out of six hundred and ten cases of ruptured extra-uterine pregnancy.

To fully understand why so few cases of this condition are accompanied by the classical symptoms of rupture, one must look to its pathology. In the large proportion of cases the impregnated ovum is implanted in the distal inch or three-fourths of an inch, of the tube. At the end of the fourth week of gestation, this ovum is about three-fourths of an inch by one inch in its diameters. At the end of the eighth week it is about the size of a hen's egg.

In the majority of cases, somewhere between the fourth and eighth week, owing to the overstretching, and possible tearing, of the but poorly distensible tube, one of two things takes place: either the ovum is discharged, more or less completely, through the unclosed *ostium abdominale* of the tube, as a tubal abortion, or the tube ruptures, with or without discharge of the ovum into the peritoneal cavity.

The condition preceding and causing tubal abortion is, generally speaking, hemorrhage into the ovum, transforming it into a tubal mole, and into the tube between the ovum and the uterus. This hemorrhage is caused by tearing of the blood vessels in the wall of the over-distended tube. The pressure of the blood in the tube between the ovum and the uterus is the active cause of dislodging the ovum and forcing it, more or less completely, from its bed.

This abortion through the open mouth of the tube is accompanied by a varying degree of hemorrhage. If the abortion be complete, so that the tube is thoroughly emptied, the torn blood vessels soon retract and hemorrhage ceases. In such a case but a few ounces of blood may escape into the peritoneal cavity, occasioning but slight, if any, pain, and neither shock nor collapse.

If, however, the ovum is detached from the tube only enough to allow the blood imprisoned back of it to escape, we may have many repeated hemorrhages, which may be either slight or severe. If the hemorrhages be slight, even if frequently repeated, no one hemorrhage may produce either extreme pain, nor shock, nor collapse.

In certain cases, however, of incomplete tubal abortion, hemorrhage may be profuse and even fatal. It is these sudden, profuse hemorrhages which produce the classical symptoms. Between these two extremes are cases presenting symptoms widely varying in their intensity.

The question of operative interference in free or recurring hemorrhage from tubal abortion, and from rupture of the tube, has been absolutely settled, but that of non-recurring, circumscribed hemorrhage is still open. It can not be denied that in some cases absorption ultimately takes place and the patient regains her health. The period of convalescence is, however, frequently tedious, stormy and dangerous. At best, a diseased tube and dense adhesions between the pelvic and abdominal organs remain to menace the woman the remainder of her life. If the blood be not absorbed, suppuration may occur, and this complication, although comparatively infrequent, must be looked upon as one which threatens every intra-peritoneal collection of blood. When suppuration takes place operation is inevitable, and must be done under comparatively unfavorable circumstances.

I can not but feel, that for the immediate, as well as for the ultimate, safety and comfort of the patient, operation should be instituted in practically every case of intra-peritoneal hemorrhage, be it circumscribed or free, recurrent or non-recurrent.

I admit that in the strict observance of this rule an occasional operation may be performed when not absolutely demanded as a life-saving measure. However, a seemingly unnecessary operation resulting from a too assiduous application of this rule is far better than the loss of even a single life from a supinely temporizing policy. Furthermore, the morbidity attendant upon any condition must be accorded its due weight when considering the advisability of its surgical removal.

When the tube ruptures, whether accompanied by complete or incomplete extrusion of the ovum from its bed, the hemorrhage at the time of rupture may be either slight or severe. If slight, the symptoms will, naturally, be correspondingly slight, while if severe the symptoms also will be severe.

In many cases, the first hemorrhage, or the second, or the third, while causing sufficient symptoms upon which to base a diagnosis and warrant an operation, are not severe. Later, however, a copious, alarming and possibly fatal hemorrhage, caused by either a more complete dislodgment of the ovum, or by a more extensive tearing of the tube, occurs. True it is, that in a certain limited number of cases, the first hemorrhage, be it caused by tubal abortion or by rupture, may be severe, may be fatal. In these pronounced cases, one can scarcely go astray in making a diagnosis, for the extreme symptoms and the readily apparent gravity of the cases, practically force a diagnosis.

Now, if one will constantly have in mind the fact that the milder cases, attended by slight but repeated hemorrhages, are many times more frequent than the severe ones, not much difficulty will be found in promptly recognizing either tubal abortion or rupture of the tube in an extra-uterine pregnancy.

Arriving at a diagnosis of extra-uterine pregnancy before rupture is closely akin to convicting a man of crime by circumstantial evidence. This evidence, in the way of history and symptoms, when considered as a whole, however, frequently enables one to arrive at a presumptive diagnosis. Add to this the physical signs, obtained upon bimanual examination, and a diagnosis sufficiently positive to warrant an abdominal section is obtained.

As to the history, do not rely too much upon the teaching that extra-uterine pregnancy occurs only in a diseased tube, for, as a matter of fact, many cases of ectopic gestation occur in women who not only do not give a history of preceding tubal disease, but who also have been apparently well up to the time of this misplaced pregnancy.

Extra-uterine pregnancy occurs generally in women under thirty-five years of age, and is frequently a first pregnancy. One of my cases was in an unmarried girl of sixteen. Two others, young and unmarried, believing themselves pregnant, because of a delayed menstrual period following exposure to impregnation, had received uterine sounding and dilatation, in an attempt to produce uterine abortion.

Pain, referred generally to the lower zone of the abdomen, but not localized, or even more distinct upon one side than upon the other, is manifest in the larger number of cases, but may be entirely, and at all times, absent. This pain is never severe prior to rupture or hemorrhage, but is more often described as a peculiar sense of fullness or uneasiness characterized by occasional colic-like pains, mild in severity. As the gestation advances, especially beyond the fourth week, these colicky pains generally become somewhat increased in severity. The increase in pain as the pregnancy advances is undoubtedly frequently caused by slight hemorrhages into, or about, the ovum.

If the ovum is not destroyed before the

fourth week of pregnancy, the menses will not, as a rule, appear. As soon, however, as hemorrhage sufficient to destroy the ovum takes place within the tube, a bloody discharge occurs from the uterus. This is not a true menstruation, but simply a hemorrhage accompanying the shedding of the uterine decidua.

This decidual hemorrhage is frequently of but short duration, lasting for a few days only, while again, provided the ovum is not completely extruded from the tube, it may persist for weeks. Death of the ovum is generally the determining cause of this hemorrhage, but not necessarily, as in some cases fetal life and development continue after complete shedding of the uterine decidua. While uterine hemorrhage is not, as a general thing, severe, yet some few deaths from this cause have been reported.

Bimanual examination prior to rupture will detect some slight enlargement of the uterus, but the size of this organ so varies in different women in health, or because of an old metritis, that this, as a sign of extra-uterine pregnancy, must not be given an unwarranted value.

The important point in this connection is, that, while the uterus in extra-uterine pregnancy will be enlarged, it will still retain the natural non-pregnant form and will not have that characteristic bulging of the anterior wall observed in uterine pregnancy.

Palpation of the tubes will generally reveal, lying close to one side of, or partially behind the uterus, a soft, semi-elastic, sensitive, generally movable tumor, varying in size from a hickory nut to a hen's egg. This tumor can, as a rule, be differentiated from the ovary.

After hemorrhage has taken place into the ovum and tube, but before escape of the ovum, the tube will, on examination, appear as a sausage-shaped mass, larger and longer than before hemorrhage, more sensitive to pressure and more or less fixed by rapidly formed adhesions.

Vaginal examination in cases of sudden, profuse hemorrhage into the free peritoneal cavity, elicits but little so far as determining the quantity, or even the presence, of blood is concerned. The tube, distended or practically empty, as the case may be, can readily be detected.

When, however, the hemorrhage has been but moderately severe, or there have been repeated slight hemorrhages, the blood, which will have gravitated into Douglas' cul-de-sac and become circumscribed by adhesions between the overlying coils of intestines, the omentum, the uterus and the pelvic walls, will form a distinct, soft, rarely fluctuating tumor, bulging into the posterior vaginal fornix and lifting the uterus forward and upward, against, or even above, the pubic symphysis.

A large, slowly healing superficial ulcer of the leg may be due to a thrombosis of one of the small vessels leading to that part. Of course, syphilitic etiology must first be ruled out.—*Am. Jour. Surg.*

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If a patient persists in running evening temperatures which cannot be accounted for after a thorough physical examination and blood examination, one should place the patient on increasing doses of the iodids, for the fever may be due to an old syphilitic infection.—*Am. Jour. Surg.*

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Persistent, remittent fever after an acute infection of the knee joint is usually due to a systemic invasion. Such cases are best treated by laying the joint wide open (Mayo operation).—*Am. Jour. Surg.*

THEORY OF THERAPEUTIC INJECTIONS OF FRESH NORMAL SERUM IN ACUTE INFECTIONS.

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Injections of specific anti-serums or a modification of the present method of inoculation with bacterial vaccines are universally looked upon as therapeutic procedures for which the future has much in store.

There yet remains much knowledge to be ascertained concerning these processes, however, and perhaps a greater refinement of technique in regard to the latter before they can be of great service in combatting disease. It is true, I believe, that the employment of bacterial inoculations in acute conditions at least have largely been ineffectual. More ineffectual still have been the so-called specific anti-serums, Flexner's anti-serum for diplococcus intracellularus being possibly the only noteworthy exception. Why do they fail to give the looked-for results?

Anti-serums owe their efficiency principally to their lytic or dissolving powers upon organisms of the strain and species against which the animal from which the serum was taken has been immunized. Bacterial vaccines owe any virtue they may have to their power of building up within the inoculated individual opsonins and anti-bodies of various kinds which eventually cause destruction to the invaders.

To comprehend the manner of this destruction of bacteria demands an understanding of the composition and action of the anti-bodies. The lysins will be considered as an example, for if the recent experimental work of Chapin and Cowie and others upon the composition of opsonins is true, i. e., that there exists a complement and amboceptor factor for each opsonin, the phenomena of lysis and phagocytosis are not greatly different in their modes of action and may eventually be solved upon similar lines.

When bacteria, dead or alive, are injected subcutaneously in repeated and gradually ascending doses, a progressive immunity against infection by that organism is soon acquired *by the inoculated animal.* Eventually, enormous doses of virulent bacteria can be given without causing infection. A similar immunity results when blood cells of another animal or any other material is injected. The immunity thus obtained results because of the formation of the so-called lysins. By virtue of their presence in the blood stream, the organisms are dissolved when brought in contact with them as sugar is dissolved in water.

It has been determined that two distinct elements are responsible for this lytic action of serum. One is thermolabile, that is, a temperature of 56° C. maintained for ten minutes suffices to destroy it. The other is thermo-stabile, i. e., a temperature of 100° C. does not destroy it. To the first of these factors, the term complement has been given. The heat-resisting element is termed amboceptor or intermediary body because of its ability to unite with complement on the one hand and bacteria on the other. Complement is present in normal serum. Amboceptor is the product of inoculation. As stated in a previous paper,* amboceptors can be detected in the blood of an infected individual very shortly after an infection has begun. As will be shown later, they are present in no small amount.

*Michigan State Medical Journal, March, 1908,

They are not then used up as fast as formed, as would naturally be expected. As the infection progresses, the amount of amboceptors increases steadily until in the midst of the disease they are present in overwhelming numbers. Complement is of course present.

But the infection still continues. Why? With amboceptors in the blood in abundance, why does not lysis of the germs occur and the disease cease? Complement+amboceptor+bacteria should produce solution of the organisms and, consequently, cessation of symptoms.

With the object of determining if possible why, with the above conditions existing, destruction of the germs did not occur, a series of experiments were undertaken which are here briefly recorded.

The constituents of the tests were as follows:

(1) Serum from a normal individual;

(2) Serum from patients in various stages of typhoid fever;

(3) Five per cent suspension of washed human erythrocytes;

(4) Serum of a guinea pig which had been immunized to human blood, and in which the complement had been rendered inactive by heating;

(5) Serum from a patient just recovered from typhoid. The typhoid, normal or post-typhoid serum supplied the complement; the hemolytic serum furnished the hemolytic amboceptors. Complement+blood cells+hemolytic amboceptors should give solution of the blood cells.

(1) .2 cc normal serum+1 cc. erythrocytes +.2 cc. hemolytic serum=complete solution.

(2) .2 cc. normal serum+1.5 cc. erythrocytes +.2 cc. hemolytic serum= complete solution.

(3) .2 cc. normal serum+1.75 cc. erythrocytes +.2 cc. hemolytic serum=partial solution.

(4) .2 cc. normal serum+2 cc. erythrocytes +.2 cc. hemolytic serum=very little changed.

(5) .2 cc. typhoid serum+.7 cc. erythrocytes +.2 cc. hemolytic serum=no apparent solution.

(6) .2 cc. typhoid serum+.5 cc. erythrocytes +.2 cc. hemolytic serum=partial solution.

(7) .2 cc. typhoid serum+.25 cc. erythrocytes +.2 cc. hemolytic serum=complete solution.

(8) .2 cc. post-typhoid serum+.25 cc. erythrocytes+.2 cc. hemolytic serum=complete solution.

(9) .2 cc. post-typhoid serum+.5 cc. erythrocytes+.2 cc. hemolytic serum=complete solution.

(10) .2 cc. post-typhoid serum+.7 cc. erythrocytes+.2 cc. hemolytic serum=complete solution.

(11) .2 cc. post-typhoid serum+1 cc. erythrocytes+.2 cc. hemolytic serum=complete solution.

(12) .2 cc. post-typhoid serum+1.5 cc. erythrocytes+.2 cc. hemolytic serum=complete solution.

(13) .2 cc. post-typhoid serum+1.75 cc. erythrocytes+.2 cc. hemolytic serum=partial solution.

(14) .2 cc. post-typhoid serum+2 cc. erythrocytes+.2 cc. hemolytic serum=very little change.

Repeated series of tests were made and the results were inevitably the same. The following conclusions seem justified:

(1) In a given volume of normal serum there are several times as much complement present as is present in a given volume of serum from a typhoid fever patient.

(2) In the serum of a patient recovered from typhoid the amount of complement approximates or equals the amount in normal serum.

To determine what is the relation of the amount of complement in an infected individual to the amount of typhoid amboceptors, the following experiments were made:

(1) .2 cc. typhoid serum+1 cc. typhoid bacilli (two million per cc.)+incubation for one half hour to facilitate combination of complement, typhoid bacilli and typhoid amboceptors+1 cc. erythrocytes+2 cc. hemolytic serum=no solution.

(2) .2 cc. normal serum+1 cc. erythrocytes +.2 cc. hemolytic serum=complete solution.

(3) .2 cc. typhoid serum+1 cc. bacteria+.5 cc. normal serum+incubation for one half hour+ 1 cc. erythrocytes+.2 cc. hemolytic serum=no solution.

(4) .2 cc. typhoid serum+1 cc. bacteria+1 cc. normal serum+incubation for one half hour+

1 cc. erythrocytes+.2 cc. hemolytic serum=no solution.

(5) .2 cc. typhoid serum+1 cc. bacteria+1.5 cc. normal serum+incubation for one half hour +1 cc. erythrocytes+.2 cc. hemolytic serum= solution.

We must conclude that in a given volume of typhoid serum the amount of amboceptors is greatly in excess of the amount of complement.

Comparable experiments with regard to pneumococcus, staphylococcus and streptococcus infections have been carried out with similar results.

Reasoning from these facts, it would seem justifiable to suppose:

(1) That the amount of complement in a serum bears some definite relationship to its vulnerability to typhoid infection.

(2) Continuance of infection depends not upon a deficiency of amboceptors but of complement.

(3) That could the amount of complement in a typhoid patient's blood be raised nearly or quite to its normal amount, cure might result.

Careful testing of anti-serums obtained from Parke, Davis & Co. and Frederick Stearns & Co., for the content of complement and amboceptors respectively, disclosed the fact that the amount of complement was uniformly low as compared with the amount of amboceptors, being approximately the amount contained in an indifferent normal serum. If cure depends upon the exhibition of complement, amboceptors being present in the infected individual in plenty, then we have an explanation why such serums are relatively inert. For, in the midst of an infection, anti-bodies can be demonstrated in abundance. With an excess already present, why supply more? The really deficient element is complement. Its content in anti-serums as furnished by the laboratories is not higher than in the normal serums. It may be lower.

The hypothesis, that could the normal amount of complement be furnished an infected individual, recovery might be expected, was strengthened by a simple experiment performed in vitro. Serum from a patient in the roseolar stage of typhoid was taken and its lytic power on virulent typhoid bacilli tested. .2 CC. of the serum were added to a suspension of 2,000,000 bacilli and the mixture incubated for three-quarters of an hour. The fluid still remained cloudy, showing that little lysis had occurred. A drop of the suspension under the microscope showed the bacilli in clumps but undissolved. 1 CC. of normal serum was now added and the tube again placed in the incubator. After half on hour it was removed. The liquid was perfectly transparent. Examination under the lens showed absence of organisms.

Practical demonstrations of the theory were now attempted by making injections of fresh normal ox serum. Apparently phenomenal reactions to the injections have occurred. The results of such treatment of various diseases with a report of cases will be published at a later date.

The number of cases in which the treatment has been tried are as yet too few to justify any definite conclusions. Suffice it to say that, theoretically, if cure is to be effected in infection by means beyond the efforts of the body cells and fluids of the infected individual himself, it must be by means of increasing his supply of complement. This cannot be accomplished materially by the amount of serum ordinarily used. We are employing doses ranging from 50 to 500 CC., depending upon the general condition of the patient and severity of the reaction as demonstrated by a trial. In addition, the injections must be repeated at frequent intervals, i. e., twice to three times daily, and continued after symptoms have disappeared or until the fluids of the patient himself are supplying the required amount of complement.

That a definite reaction detrimental to the welfare of the invaders occurs when an infected individual receives injections of

normal serum may be inferred from the oscillations of temperature, and the general improvement in the condition of the patient. It can be definitely observed by a test of either the amount of complement in the blood of the patient before and after an injection, and also by the increased phagocytic power of the leucocytes, namely, by the determination of the phagocytic index. By these methods, during a period of varying length, depending upon the size of the dose of injected serum, an increase in the amount of complement and in phagocytosis can be shown. After an interval of four or five hours, the index drops, but regularly remains higher than it was before the injection. Repetition of the injections results in a gradual ascent of the index with less succeeding fall.

Attempts have been made to extract the complement from large amounts of serum and use it without the necessity of injecting the other contents of the serum, but, as yet, without avail. Fresh normal ox or horse serum has been our only source of supply up to this time.

A NEW APPARATUS FOR THE TREATMENT OF FRACTURE OF THE PATELLA*

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Calumet.

The indications to be met in this injury are the limitation of the effusion, the reduction of the fragments, the maintenance of the reduction until union is satisfactory, and the restoration of normal joint function.

The ideal method of meeting the second of these indications is no doubt suturing of the fragments. This, however, is a very serious operation, as it opens one of the large synovial cavities of the body and exposes it to infection. If sepsis results, the following conditions are imminent,—a stiff joint, amputation at the thigh, and possibly death from septic infection.

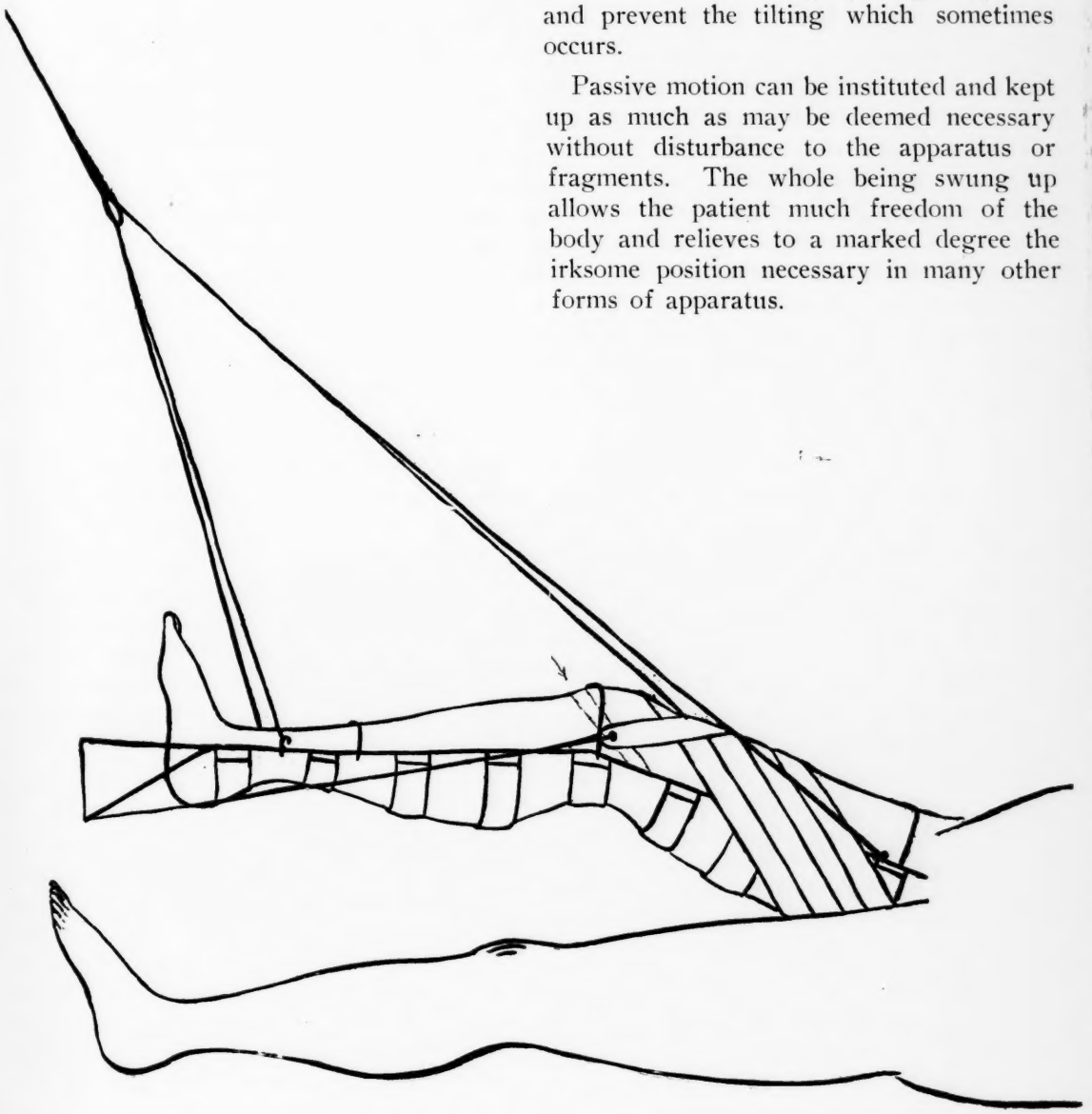
It should be undertaken only by surgeons of surgical judgment and skill, and who have at their command skilled assistants and can work under the most rigid aseptic conditions. Unfortunately many cases of fractured patella occur where this skill and the necessary surroundings cannot be obtained. For the purpose of assisting those practitioners who cannot treat this injury by suturing, I have taken the liberty of showing a splint which has given me excellent results. This apparatus has been evolved from the inclined plane and extension by weight and pulley; but as this confined the patient in an irksome position, I have applied these indications to a wire splint which has as its foundation a Hodgen fracture splint.

As the separation of the patellar fragments is chiefly due to the contraction of the quadriceps extensor muscle, it becomes necessary to have this relaxed to properly bring the fragments in apposition. To get a fixed point from which to make this traction, adhesive strips 1½ inches wide are used, applied somewhat after the manner of the Indian puzzle. The first strip passes from the inner and upper part of the thigh across the anterior surface to the outer side of knee-joint, leaving an end for the application of a traction cord. The same on outer side of thigh across to inner surface

*Read at the Saginaw meeting of the Michigan State Medical Society, May 15-16, 1907, and approved for publication by the Publication Committee.

of knee-joint. A sufficient number of these strips are used to cover the entire muscle. A traction cord is then fastened to each aggregation of the ends of these strips on the inner and outer sides of the knee-joint. These cords then pass downward at an oblique angle and are fastened to the lower end of the splint. The whole is then swung by the suspension ropes and the amount of traction adjusted by the angle of suspension from the ceiling of the room. A firm pad just above the upper edge of the upper fragment will materially assist in keeping this fragment in position and give an additional point for the better traction. The lower fragment is held in position by means of adhesive strips pulling it upward and prevent the tilting which sometimes occurs.

Passive motion can be instituted and kept up as much as may be deemed necessary without disturbance to the apparatus or fragments. The whole being swung up allows the patient much freedom of the body and relieves to a marked degree the irksome position necessary in many other forms of apparatus.



REPORT OF A CASE OF SUDDEN DEATH IN AN INFANT HAVING AN ENLARGED THYMUS GLAND WITH THREE LOBES*

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Z. H., aged 12 months, male. Mother had four miscarriages. This was fifth child and only one to come to term. Artificial feeding from birth. At the age of 10 months had two slight convulsions but soon recovered. Four days before coming to the dispensary the child had a slight bowel disturbance for which the mother gave a small dose of castor oil. The next day the child was better, but on the second day following was dumpish and apparently had some pain in the abdomen and had two green stools. Was given a light diet and was brought on the morning of July 31 to St. Mary's Dispensary. The baby cried while in the waiting room and the mother fed it from a bottle containing a thin mixture of soda cracker and water. After emptying the bottle and while lying on its mother's arm the child suddenly began to breathe hard, rolled its eyes up and in about five minutes it was dead. Dr. R. G. Shaw, the assistant director of the dispensary, saw the child just as it was dying and states that it had no convulsion but was cyanosed and evidently struggling for breath. The autopsy was performed about three hours after death. The child was rather poorly nourished, but not extremely emaciated. Upon opening the abdomen the transverse and the descending colon were found greatly distended with gas. The stomach was nearly filled with a finely flocculent fluid, evidently the unchanged contents of the nursing bottle. Otherwise no pathological conditions were found except an enlarged thymus.

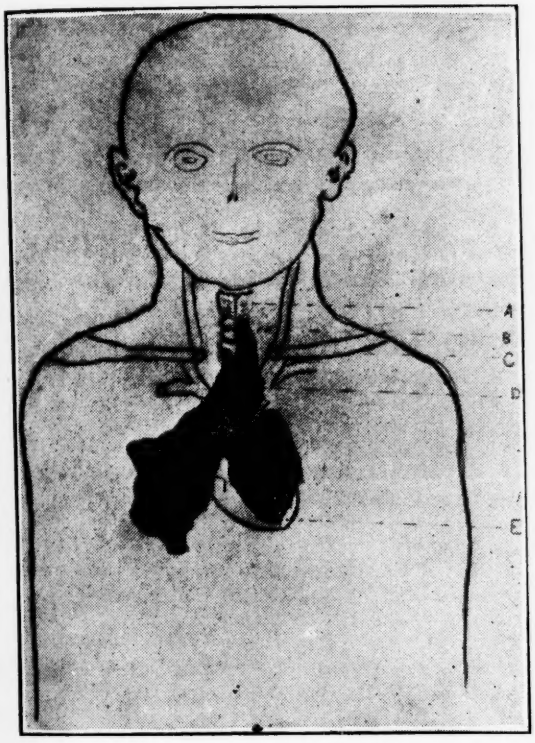
The left lobe of the thymus was closely adherent to the pericardium and the right lobe was loosely supported by substernal connective tissue. The middle lobe extended finger-like directly up the front of the trachea and its upper extremity was only 2 centimeters below the lower border of the cricoid cartilage. The gland was carefully removed, weighed and measured at once. It was triangular, measuring 9 centimeters on two sides and its greatest transverse diameter was 7 centimeters. It weighed 17½ grams. It seemed perfectly possible from the autopsy conditions that the pressure of the upper lobe upon the trachea might have been sufficient to cause death from asphyxia. The intra-thoracic pressure was evidently increased by the greatly distended bowel. When to this was added the 6 ounces of fluid given from the bottle the pressure was of course further increased. It is quite possible that there was also some retraction of the child's head as it lay upon its mother's arm which would assist in completely compressing the trachea.

Microscopical examination of the thymus at the Detroit Clinical Laboratory showed edema of the connective tissue and dilatation of the small vessels.

In order to bring out the possible significance of this case, it may be well to consider the views which have been held concerning the thymus. This gland, which can be removed after birth without apparent effect on the body, is situated in the anterior mediastinum. On opening the thorax of an infant and pulling back the lungs from the median line, one sees this grayish-pink lobulated gland, overlaying the pericardium and the great vessels and often extending up into the neck. In the latter case its finger-like upper extremities lie directly upon the trachea and may reach quite to the isthmus of the thyroid. This was the relation in the case above reported. The size of this gland varies considerably, but after the second year it normally atrophies and the true glandular tissues are replaced by fibrous tissues and fat. By far the most common

*Read before the Wayne County Medical Society, March 9, 1908.

pathological condition of this organ is the persistent hypertrophied thymus. This condition is not infrequently found accompanying exophthalmic goitre. A century ago it was thought that an enlarged thymus gave rise to dyspnea, which was known as thymic asthma. Laryngismus stridulus, which is so frequently the cause of sudden death in infants, was considered to be due



to a reflex caused by the pressure on the trachea of the enlarged thymus.

In 1858 Friedleben published his elaborate monograph on the thymus, showed that many deaths due to laryngismus stridulus had a normal thymus and announced that there was no such condition as thymic asthma. For thirty years his dictum was largely accepted and the statement still appears in many texts that dyspnea from mechanical pressure of the thymus is a myth.

In 1888, however, Jacobi pointed out that while Friedleben's observations were largely correct, there still remained a small group of cases in which thymic enlargement did appear to be the cause of dyspnea and sometimes death. The case reported here, it seems to us, belongs in that small group of cases.

Siegel's case, published in 1896, is an example of this type. A boy two and a half years old had suffered from dyspnea for four or five weeks; there were paroxysmal exacerbations in which the child seemed moribund from asphyxia. No laryngeal obstruction could be found. Tracheotomy failed to give relief until a tube long enough to reach the bifurcation of the trachea was inserted. This gave relief, but could not be worn long because of pressure ulcers. When removed the symptoms returned. The superior mediastinum was now opened and the thymus bulged into the wound. It was drawn out as far as possible and sutured to the fascia over the sternum. The dyspnea was completely and permanently relieved.

The *status lymphaticus* of Paltauf and Escherich is present in many of these cases and statements are even made that thymus enlargement does not exist independently. In this condition death occurs from syncope. In the case here reported, however, no other evidence of the status lymphaticus was observed, and the death was accompanied by distinct symptoms of asphyxia and not syncope.

This case, then, seems again to show that there is a small group of cases where death is actually due to pressure of the thymus, increased, perhaps, by other factors. In this case the intrathoracic pressure was increased by a distended stomach and colon, and probably also by bending of the neck.

ONE CASE OF OTO-ANTRITIS, ONE OF SUB-PERIOSTEAL ABSCESS IN INFANTS; ONE PSEUDO-CHOLESTEATOMA, ONE OF EXOSTOSIS, AND ONE OF ARTIFICIAL DRUMMEMBRANE IN ADULTS*

EMIL AMBERG, M. D.,
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1. Boy baby S., born April 13th, 1907, was seen by me June 4th, 1907. He was then seven and one-half weeks old. I was told that the right ear started to discharge when the boy was ten days old. There was a very pronounced swelling on the right side of the head caused by a subperiosteal retroauricular abscess. In chloroform-narcosis at the house, I made a simple incision evacuating a large quantity of pus. About three weeks afterwards, in my office, assisted by Drs. McFall and McQuisten, I enlarged in chloroform-narcosis the incision considerably, removed broken-down tissue, and, according to Dr. McFall's statement, some granulations from the antrum. The child made an uneventful recovery. This case is reported on account of the youth of the patient.

2. Baby boy N. S., six and three-quarter months old, was seen by me January 27th, 1908. The right ear was discharging. The left ear showed signs of acute otitis media and the drummembrane was incised by me. The right drummembrane, I learned, ruptured by itself about two weeks previously. There was an edematous swelling behind the right ear. O opened a deep-seated subperiosteal abscess on January 3t0h in the Woman's Hospital. Dr. Beisman was kind enough to give chloroform; 35 minims in all were required. The Clinical Laboratory reports the presence of staphylococcus aureus. This case is reported on account of the youth of the patient.

3. Mr. Bert R., thirty-four years old, was seen by me October 26th, 1907, having suffered for about a week from severe dizziness and vomiting and making the impression of being very sick. The history of previous and long-continued discharge from his left ear, which still existed, suggested to me a severe affection of the middle ear with possible complications on the part of adjacent structures. Operation was advised but not accepted just then. Patient told me that he had undergone a major operation for ear trouble about ten years ago, which, however, he claims did not stop the discharge. I learned that a mastoid operation had been performed. Upon urgent advice patient at last underwent an operation in Harper Hospital November 8th. The accompanying specimen shows the amount of cholesteatomatous material removed from the mastoid cavity. The greater part of the radical operation which I completed was practically done by nature during the intervening ten years. The retroauricular incision was closed by Michel's clamps, only a small temporary gauze-drain was left in the lower corner. All the dizziness and vomiting disappeared after the operation. The patient left the hospital after ten days and went to work one week after that.

This case is reported in order to demonstrate, first, that the accumulation of cholesteatomatous material in the middle ear, to which the mastoid process belongs, can pro-

*Read before the Wayne County Medical Society, March 9, 1908.

duce symptoms similar to those seen in severe complications extending beyond the middle ear; and secondly, the fact that this kind of chronic middle ear affection is extremely dangerous. The invasion of the cranial cavity was, in my opinion, only a question of time.

4. Mr. S. S., age forty, consulted me on January 3rd on account of pain in his left ear, which he said had lasted for about nine weeks. Examination showed the lumen of the external auditory canal narrowed to about one-half its size by a protrusion from the upper wall about half-way between the orifice and the drummembrane. This protrusion was of hard consistence. Shortly before having been referred to me his physician had very skillfully removed the left tonsil. A suppurating surface was in evidence, especially in the region of the posterior pillar, causing much pain and discomfort. The pain in the ear was considered by me as irradiating from this source. The patient, however, persistently complained of pain not only in his ear but also in his head, so that I, hesitatingly and reluctantly, decided to remove the obstruction, thinking of the possibility that I had perhaps to deal with an osteosarcoma. I was obliged to discontinue the trial to remove the body from the canal in my office on account of pain, and I made the observation that the body appeared somewhat movable. With little enthusiasm, I consented at last that the patient enter the hospital. Existence of the throat affection did not give me a very clear indication to interfere with the exostosis. Furthermore, Politzer states that an exostosis should only be removed if firstly the hearing is diminished to a high degree in consequence of a complete occlusion of the external auditory canal by the exostosis, when at the same time the hearing in the other ear is diminished, and, secondly, if the external auditory canal is inflamed and when at the same time the secretion cannot escape on account of new formation of bone. On January 31st, in ether-narcosis, I detached the auricle, removed the apparently pedunculated small osseous body which I present to you, and also a little of the posterior osseous canal, made a plastic, kept the flaps in apposition to the wound borders by two catgut sutures and enclosed the first incision by Michel's clamps. The exostosis is of the size of a small pea. The pain in the ear and head disappeared. The throat cleared up under local and general treatment. The existence of a luetic affection could not be established. I may add that we were obliged to discontinue the inunction cure because the following complications appeared: On February 2nd a chill set in, the temperature rose suddenly to 103.8, and the left side of the head became reddened and swollen, showing the picture of a wound infection somewhat resembling erysipelas. Weak creolin dressings in the canal and on the outside made the symptoms disappear after several days, but an affection of the right lower lung accompanied by pleuritis appeared. The possibility of infarct was suggested by Dr. Flintermann. Bloody sputum showed itself for a limited number of days, and later a fluctuating swelling below the right clavicula. A large infraclavicular abscess was opened by Dr. Ballin March 3rd, 1908, and a great quantity of pus was evacuated. The presence of streptococcus is reported. It is not yet clear to me whether the lung affection was due to an infarct, to an ether pneumonia, or to aspiration of some of the material from the surface region where the tonsil had been removed. Pneumococci were present in the sputum, but no tubercle bacilli, as the Detroit Clinical Laboratory reported.

January 27th to 31st the temperature oscillated between about 97 and 101 and 99 and 101. February 2nd it rose to 103.8, February 4th to 103.4, February 5th to 13th it ranged between 102, 103, and subnormal, being irregular February 14th and 15th between 101 and sub-normal. The patient is improving. The temperature remains about normal in the last few days. The ear has healed since about a week.

This case is reported on account of the dilemma in which we find ourselves sometimes in regard to the differential diagnosis.

5. Mrs. A. M. P., thirty-nine years old, was referred to me on May 31st, 1907, with the history that she suddenly became deaf after cerumen had been removed, which extended to the tympanic cavity. Patient suffered from the grippe in 1903 with offensive discharge from the left ear. She reported that she was very dizzy when the cerumen was removed. Examination revealed the absence of the drummembrane. The head of the stapes was plainly visible. The appearance of the tympanic cavity and the sudden deafness following the removal of cerumen suggested to me the therapeutic measure which consisted in the application of an artificial sound-conducting body to the stapes. I, therefore, placed a small paper disc of about three-eighths of an inch in diameter over the head of the stapes, which I supported in addition by gold leaf of some larger dimensions, with the effect that the hearing power was materially increased, e. g., for the watch from firm contact-audition to one-half of an inch. Ninety-eight, whispered, was heard in a distance of a little over twelve feet.

This very simple procedure finds its parallel in many instances in which an artificial drummembrane might be employed to advantage, e. g., in tension anomalies of the drummembrane, which are very little considered by the medical profession.

A layman, the inventor of an artificial drummembrane which appears to be sold extensively, told me how he was led to the construction of his device. He was very hard of hearing. While following one day his occupation in a room in which an engine was working, he wrapped a piece of cotton around a small piece of wood in order to cleanse his ear. He had scarcely introduced the plug deep into his ear, when the noise created from the engine became so alarmingly loud to him that he thought an accident had occurred and he shouted to stop the engine. Then he found to his great surprise that the change did not occur without his ear but within the same, and, in good faith, basing on this experience, he constructed an artificial drummembrane of rubber. As we know, artificial drummembranes have been used by otologists in various modifications, for a long time. The physician was of course entirely correct in removing the cerumen in our patient. This cerumen had formed an artificial drummembrane, the absence of which caused the deafness.

This case is reported because it clearly demonstrates that we may reach results by laying proper stress on the sound-conducting mechanism and that we should not neglect therapeutic efforts which not only belong legitimately to the medical profession, but which are very liable to do a great deal of harm to the patient if they are employed injudiciously. If there exists a suppuration in the tympanic cavity, its closure by an artificial drummembrane is apt to prevent drainage and this may be followed by evil consequences.

A NEW DIETETIC AND INJECTION METHOD OF TREATING TYPHOID FEVER, WITH A REPORT OF ONE HUNDRED AND THIRTY-EIGHT CONSECUTIVE CASES SUCCESSFULLY TREATED IN THE LAST TEN YEARS*

F. J. W. MAGUIRE, B. S., M. D.,
Detroit.

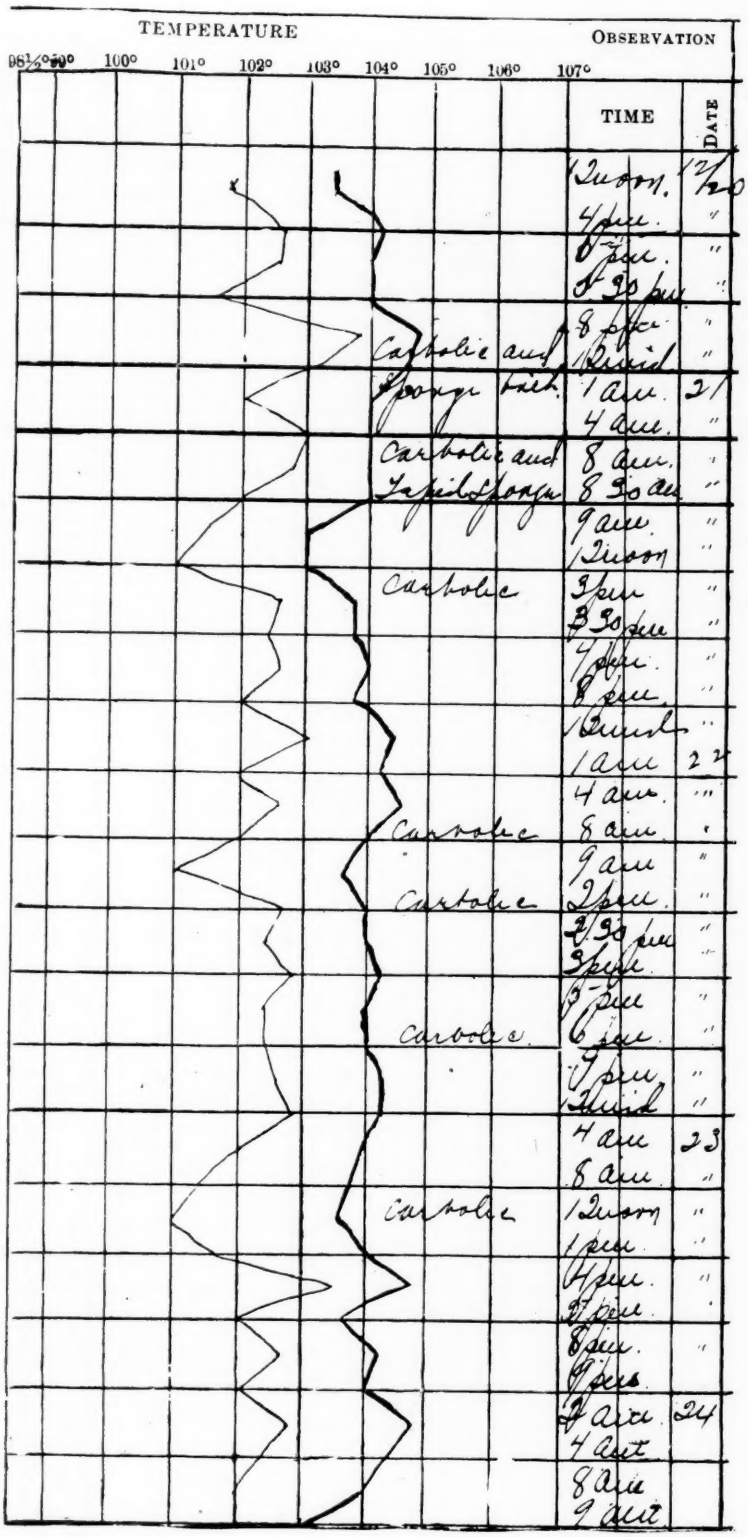
In bringing this treatment of typhoid fever before the profession it is with the hope that I may be able to prove that the mortality in this dreaded disease may be greatly reduced. My attention was specially drawn to this disease soon after graduating in medicine.

Being appointed A. A. Surgeon in the U. S. Marine Hospital service, I had ample time and opportunity to study typhoid fever, as we usually had from ten to twenty cases in the wards in the hospital. It was here my attention was attracted to the disastrous results following the use of milk as a diet.

In the first autopsies I made on cases where the milk diet had been used, I observed tough, cheesy curds in the intestinal tract, sometimes quite considerable in amount. In one case a long, stringy, tough curd had perforated through the intestine, and other smaller pieces I found in the abdominal cavity. At first I did not attach much importance to this, thinking it merely a coincidence, but on performing other autopsies following typhoid fever I continued to find the same conditions. I came to the conclusion that under certain conditions such curds may readily occur in the intestinal tract of typhoid fever patients and mechanically irritate the raw surfaces over which they pass, increase local inflammation, give rise to decomposition and the resulting gas pressure place the weak surfaces of the ulcerated peyers patches under great strain, finally causing hemorrhages and perforation. After resigning from the U. S. Marine Hospital Service and entering private practice, I still continued my study of typhoid fever. The first year I practiced, two out of five of my typhoid fever patients died. I concluded that if I were to continue treating such cases according to the method described in the text-books and the instruction I had received during my college and hospital course, the result would be disastrous. This led me to experiment along dietetic and therapeutic lines. It was quite evident to me that the question of diet was equally as important as the question of treatment.

I noticed when treating children with summer diarrhea that shortly after giving them nitrogenous food in the form of milk or beef tea, their temperature would always rise. I found that by giving these children a carbo-hydrate diet in the form of barley or rice water, I rarely had a rise in temperature. With this observation in mind and remembering the results found in my autopsies following typhoid, I came to the conclusion that milk as a diet in typhoid fever should be eliminated. To further strengthen this theory I determined to carefully watch the results following the use of a milk diet and compare them with the results following the use of carbo-hydrate diet in the form of rice or barley water, etc. In eighteen cases I found the temperature rise following the milk diet, while there was no perceptible increase in temperature

*Read at the Saginaw meeting of the Michigan State Medical Society, May 15-16, 1907.


TEMPERATURE
OBSERVATION
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12 noon. 21/20
4 pm. "
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Carbolic and Liquid "
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after taking rice or barley water.

I need scarcely add that as a food in typhoid fever I have never since used milk. It is my practice, when I first see a typhoid fever case, to give plenty of sterile water by mouth for five to ten days or until the patient seems to require nourishment, then I use the peptonoids well diluted with sterile water, and the various flavored ices and gelatines. I condemn cow's milk, as it is a culture medium and the cause of a great deal of local irritation.

Nature, as we doctors have reason to believe, is a great teacher, but it remains for us to observe carefully her lessons and apply the result. The appetite is lost in typhoid fever during its entire run. This should teach us not to feed our patients. Again, when we have ignored nature's lesson in this respect, she frequently comes to our aid by causing vomiting or diarrhea as a means of ridding the alimentary canal of the irritating materials. If any further argument against milk is necessary, compare the statistics of the mortality in our own army during the Spanish-American War from typhoid fever, where milk was largely used as a diet, with those of Japan in her recent war with Russia, rice water being the diet used by the Japanese in treating typhoid fever and dysentery. Having eliminated the milk diet with its terrible irritating effects in the already inflamed Peyer's patches, half the battle is won. This brings us to a consideration of the therapeutic aspect of this subject. In taking up the use of carbolic acid as the therapeutic agent in typhoid fever, I at first thought that I had discovered means whereby I could abort the disease. I commenced by giving half-dram doses of carbolic acid in a pint of sterile water as an enema. This I found very severe. The temperature would drop from 104 to sub-normal and the patient showed signs of carbolic acid poisoning. The temperature would run from normal to 100 for a few hours, then resume its course. The kidneys were carefully watched in all these cases, as they are the filters by which the toxins are eliminated. In my next series of experiments I began with one drop of carbolic acid in a pint of sterile water given as an enema; if the temperature was not reduced, I gave another enema in three hours with two drops, and so on increasing until I gave as high as ten drops or the tolerance of my patient allowed. My next series of experiments was with the drop method of injection. I mixed three to five drops of carbolic acid in a pint of sterile water, placed the solution in a fountain syringe alongside the bed and about a foot above the patient and allowed about one hour for the solution to pass into the rectum. This was regulated by a gauge with a water-glass attachment which shows how fast the water drops. Through the reverse mucous currents this solution is carried throughout the intestinal tract and through this large area of absorption is carried to every tissue in the body.

Dr. Charles Bond, of London, England, has demonstrated how quarts of water can be carried by these reverse mucous currents throughout the intestinal tract. He claims that you can actually drown the patient by this method of enema. It is through these reverse mucous currents this mild carbolic solution is carried throughout the intestinal tract, and that large area of absorption has a wonderful power of destroying toxins in the blood. I do not limit the use of carbolic acid injection to typhoid fever. I have met with phenomenal success with this mode of treatment in reducing temperature in pneumonia and gastritis and have carried cases of acute appendicitis to a sub-acute or the chronic form, thereby lessening the danger from infection at the time of operation. In these 138 cases reported here today the ages ranged from three to seventy-eight years. I gave no cold baths, but applied ice bags over the abdomen, and one bath a day for cleanliness. Occasionally I gave a little strychnine, quinine and salol as indicated. Since adopting this dietetic and carbolic injection method of treating typhoid fever I have treated 138 consecutive cases. This

covers a period of about ten years. All these cases responded readily to treatment, notwithstanding the fact that many were well advanced before treatment was begun. Four cases had had most profuse hemorrhages, all of which subsided when the milk diet was removed. I believe by these experiments I have made some very valuable therapeutic and dietetic discoveries and have sufficient confidence in my treatment that I am compiling a work on the subject.

Typhoid fever has always been one of the scourges of ancient and modern warfare, therefore in peace why not let us prepare for war, when we see how the British Army lost 7,991 men from typhoid fever in the Boer War, compared with 7,582 men lost in battle, and how the American troops suffered a loss of over 1,500 men from typhoid fever as compared with the small number of 100 killed in battle.

I firmly believe that the above will give food for thought to those whose lives are devoted to internal medicine and that something will be done to stop the terrible ravages of typhoid fever.

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SOME REMARKS ON BILIARY SURGERY*

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To increase the therapeutic efficiency of surgery is the manifest purpose of every member of this society, and in bringing before you the subject of Biliary Surgery, I realize that I shall gain in the course of discussion that will follow my paper much valuable information. For many years it was thought that biliary surgery dealt only with gall stones, but now, under that term, we mean not only the removal of calculi, but the replacement of the gall bladder to its normal position, the drainage of the gall bladder for empyema, the separation of adhesions, which compass angulation of the biliary ducts and interfere with the free movements of blood through the portal vein, drag upon the duodenum to interfere with the passage of the contents of the stomach into the small intestine; and, in fact, accomplish preventive as well as therapeutic measures in menaced cirrhosis of the liver.

The anatomy of the region concerned in biliary surgery embraces the longitudinal fissure and all the structures entering through it, the fissure of the gall bladder, the transverse fissure, and the lobus quadratus, to say nothing of the abdominal parietes, the peritoneum, the transverse colon, the stomach, the duodenum and the lower margin of the liver.

The pathology upon which biliary surgery may rest involves all the organs more or less which I have mentioned. The ultimate outcome of the morbid processes going on in these organs is the most serious disaster which can possibly assail a sick man. It is most insidious and the signs by which it is indicated are obscure and misleading. Usually it is determined by the general hopeless undermining of the patient's health. There is a history of disturbance of digestion, of pain, of

*Read before the Shiawassee County Medical Society. This is the last paper written by Dr. Wyman before his death.—Ed.

eructation of gases, of tenderness on pressure in the region of the biliary passages all in endless confusion, with loss of strength, flabby muscles, flabby skin, sometimes jaundice, sometimes diarrhea, sometimes constipation, all combined to make a picture, composite in character, which means that the patient has little hope for restoration of health by any means outside of direct surgical intervention. And what does this surgery do? It removes the calculi in case they are present, it removes the angulation, and twisting of the cystic, hepatic, and common duct, it drains purulent and mucous discharges, it restores the free flow of bile from the liver to the intestine, and it rearranges the channels of the portal vein, and of the duodenum, and of the pancreas so that not only does the blood move freely from the whole digestive tract into the liver, but the pancreatic fluid finds its way unobstructed into the duodenum, the hepatic juices composing the bile find their way into the duodenum, and that organ and the stomach find their motility increased.

How does such a distressful pathology come about? Through impactions originating in the stomach and duodenum, in the bile itself. For long physiologists taught that the bile was an intestinal disinfectant, and it doubtless is, but at the same time it may, under certain conditions, become the most infectious fluid of the animal economy. It must have free access to the intestine, and through the intestine, or vomiting, prostration and death will speedily ensue. It is the main source of the profound intoxication that we find in all cases of obstruction of the bowels high up in the intestinal tract, and so venomous is it under these circumstances that the relief of intestinal obstruction and the release of the dammed back and overflowing biliary secretion is imperative, and must be accomplished at all hazards. In those cases of obstruction of the bowel the first step in the surgical procedure is to find the point of obstruction and release it or relieve it; and the second is to tap the gall bladder and establish a temporary biliary fistula in those cases in which the causes of the obstruction appear to be due to a general peritonitis. You have doubtless many of you noticed that in nearly all cases of fatal peritonitis in which the inflammatory process had become general, the patient always has a few hours, six to thirty-six, during which the ejecta are brown, dark, and black, a precursor of almost invariable death. For this condition the remedy usually advised—and practiced, sometimes—is the establishment of a fecal fistula. But it is better surgery, founded on a sounder physiology, to make a biliary fistula through the gall bladder at the same time and make sure that the poisonous bile is drained out of the system until the bands or other causes of the intestinal obstruction have disappeared.

The determination or diagnosis of the conditions I have mentioned, which constitute the measurable pathology in all cases is to be found in the careful study of the patient's history, noting previous attacks of intestinal and gastric disturbances. The story of pain in any part of the abdomen, particularly the epigastrium, and in the shoulder, the aspect of the skin, whether clear, tawny, bilious or jaundiced, the loss of weight, of strength, the determination of temperature, the story of previous illness, typhoid, or malaria, or of venereal poisons, the story of miscarriage, of dystocia, of infections, affecting any of the organs in any part of the abdominal cavity; then the history of violence, of blows, of injuries, of displacement, of liver, stomach, transverse colon or kidney, or perforation of the intestine or the appendix vermiformis, a history of dysentery, of intestinal parasites, like the anchylos-

toma, of intestinal worms, and foreign bodies, makes a foundation for a physical examination which is limited to a relatively small area.

Probably the best way to determine the actual condition of organs which may need the therapy of surgery for their relief is by palpation. It is so easy to talk of the "tactus eruditus," the learned touch, that I feel as though I was imposing on your good nature in dragging this time-honored method of diagnosis before you. That a man who thinks with his fingers and feels daily with every opportunity may acquire a sense of touch so skilled that he can detect thickening, displacement, distortion, deep in the recesses of the body, I firmly believe, and cite to you the practice of nearly all of the great clinicians who practice surgery, as we find it today. To explore the biliary tract by the sense of touch, the patient should be first in the horizontal position, one hand of the examiner placed with the fingers upward over the epigastrium and the right rectus abdominis muscle, the other hand, usually the left, under the floating rib; movements of the fingers of the left hand crowding the ribs and the organs resting on them up into the abdominal cavity will be communicated to the right hand fingers pressing over the epigastrium. They will enable the right hand to detect the rise and fall, the normal movement of about one-half inch of the liver, synchronous with respiration. Then sweeping the right hand to the right of the right rectus muscle, the gall bladder, if at all enlarged, will be felt beneath the fingers. If it contains calculi, a grating feeling will sometimes be felt. If it is distended with pus, mucus or blood, its enlargement will be readily noted, and its tenderness appreciated by the delicate resistance of the abdominal muscles. Impairment of the up and down movement of the liver in respiration may be determined by palpitation, and its significance of inflammatory processes, exudates and adhesions cannot be misinterpreted. These physical facts, which depend on touch and intelligent sensibility on the part of the surgeon, combined with the history of poor health as indicated in the foregoing general remarks, make the foundation upon which the surgical procedure is devised.

Access to this region with the knife may be obtained by an incision commencing in the epigastrium and extending downward obliquely about one inch below the margin of the costal cartilages, a distance of three inches. It divides the rectus muscle, and opens the peritoneal cavity, gives opportunity to introduce the finger above the transverse colon, to explore the gall bladder, and with the cystic duct as a guide, to follow it down to the common duct, the portal vein and the pancreatic ducts. On the right of the exploring finger will be the duodenum and the stomach. On the left will be the liver and gall bladder. Beneath it will be the common ducts, pancreas, portal vein, and beneath them the kidney. Adhesions causing angulation and obstructions can be usually easily swept aside. The gall bladder can be easily dragged into the wound, secured by suture and drained, or in case it is found pendulous, as is often the case, it can be separated from its attachments to the liver and circled by a ligature, and cut away. The small gall bladder, if slightly enlarged, will often be found pendulous, and in need of drainage. It should then be sutured to the upper margin of the wound, so that it would be in the line of natural drainage. The technic in those cases should include a careful suturing of the peritoneum in contact with the gall bladder, when it has been drained, and the careful closing of the fibrous structures and of the muscle and skin by interrupted sutures. Then the patient should be put

to bed comfortably on the right side and the bowels kept open by laxatives or enemata. If these plans are carried out with reasonable dexterity and speed, adhesions obstructing biliary passages and portal vein, or empyma or calculi of the gall bladder need not destroy the patient. If the common duct is obstructed by calculi, they may be sometimes pushed into the intestine, leaving the duct large and patulous, in which case nothing more need be done except to close the abdominal wound; but sometimes the calculi are fixed, and can only be removed by section of the ductus communis cholodochus, and in that case careful suturing is sometimes practised, but it is not necessary; drainage with the small tube of glass or rubber, held in position opposite the opening in the common duct or hepatic duct by a slight packing of gauze, not large enough to interfere with the channel of the duodenum, will conduct the bile out of the body until the wound heals spontaneously, and the bile again discharges normally into the intestine.

I find in practice, no matter how simple and uneventful the surgery of these cases is, some attention must be given to their rest, diet, drink, air, and occupation, or convalescence will be tedious and relapses occur. A radical change of food, drink, and industry must be insisted upon in all cases, else subtle autoinfection will again load the system with injurious products and retard the cure.

INFANT FEEDING IN GENERAL PRACTICE*

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Pediatrics as a speciaty is comparatively of very recent development, and is still, in this country at least, not very clearly differentiated in its scope from that of the internist on the one hand and on the other that of the general practitioner. The present is no place for me to attempt to define the functions of the specialist in this line, but I am stating, I think, a very obvious truth when I say that the greatest field for his activities lies in the scientific management of infant feeding, and that it is just here, too, that he may seem most to encroach upon the domain of the general practitioner, and that their mutual relations are at present most unsatisfactory. For these unsatisfactory relations I can see more than one reason, and I am in fairness compelled to say that the trouble seems to me to lie largely on the side of the specialty and its followers.

With very few exceptions, the specialist in any line is properly a consultant, and should come into a case only when the general practitioner finds himself in difficulties. The too prevalent tendency of the layman to consult a specialist directly for anything aside from the most ordinary ailment, and a somewhat excessive readiness on the part of the specialist to encourage this practice, is annoying to the general practitioner, and has aroused a certain resentment and distrust against specialism which unquestionably leads many men to hold on to their cases to the last possible minute, and to seek aid perhaps too late. In pediatrics especially I notice what

*Read before the Ann Arbor Medical Club, April 28, 1908.

seems to me an unfortunate tendency on the part of many patients to entrust the entire care of the child to the specialist (real or self-styled) and an acceptance, or even a reaching out after, this kind of practice on the pediatrist's part as his proper and legitimate field, which he would very likely justify by saying that the average general practitioner knows next to nothing of infant feeding; that his inability to handle cow's milk leads him to the employment of the easier but often deleterious proprietary foods; that he seldom calls a consultant until he has got things into a hopeless muddle; and in general that the only way to get any satisfaction out of infant feeding is to have your cases from the start.

Personally I should be very much better satisfied with my own position, and that of the specialty which I have elected, if all of my patients came to me through the family physician, and I could feel that my relations with him were based on a proper degree of mutual respect and confidence; and realizing as I do how much truth there is in the arguments I have quoted, I am led to inquire why it is that infant feeding is so much of a mystery to all but a few of the elect. Is it really so much more difficult to feed the child than to diagnose and treat pneumonia, heart disease, appendicitis, and all the other diseases the physician is daily called upon to handle? It doesn't seem so to me; but if this is not the case, it must be that he is either unwilling to take the trouble to learn, or is badly taught. Probably most practitioners are as willing to be instructed in this as in any other branch, and if they lack instruction one can blame only the specialists, who should be their teachers. Now without in any way assuming to be an authority or a great teacher, and without attempting to condense a textbook into a brief paper, it has seemed worth while to me to try to simplify somewhat a subject which has become unnecessarily involved and obscure, and to inquire whether there are no general principles by which the ordinary physician may guide himself in the management of those children at least whose nourishment presents no extraordinary difficulties.

Any one who is acquainted with infant feeding as it is practiced in different localities must have been struck by the very wide divergences in the methods followed, and the principles upon which they are based. Indeed, on the continent it seems almost to be taken for granted that every head of a clinic must have a different theory and a different system. When the American, brought up to believe that casein is the *bête noir* of the infant, and that the only sensible and proper way to get around it is by the use of whey and cream, finds Budin using sterilized whole milk; then goes to Heubner and learns that casein, fat, and dilution are of no especial importance, but calories are the thing; then hears from Biedert of the "Schaedliche Nahrungsreste"; from Czerny and Keller of fat diarrhea and fat constipation; finds that a man named Meyer has proved conclusively that the whey is the root of all evil, and then, in Hungary or Holland, discovers that buttermilk is a sure cure for all the ills the child is heir to; he begins to wonder whether anybody really does know anything at all about the subject. One thing is obvious to him, however, after reflection; that is, that these men are all good clinicians, and successful in their work, and as their theories cannot all be right he comes eventually to the rather comforting conclusion that the average healthy child must be able to take care of cow's milk in almost any form. The real skill and success of these men lie, not in their theories, but in their ability to diagnose and handle the source of

trouble in the child that does not flourish on the routine treatment. If we could but know the percentage of these exceptional cases which occur under each method of feeding, we should go far toward settling many vexed questions and might soon find our way toward the uniform and satisfactory system which we still lack. Failing this, it seems to me that the best thing for the general practitioner is to leave the specialist to wrestle with complicated theories of digestion, assimilation and metabolism, and in the light of such facts as are more or less generally agreed on, select some system which is easily understood and put in practice, and easily varied in the individual case, bearing in mind that the real problem and the important thing for him to study is the diagnosis of the trouble when the system goes wrong. From this point of view I wish to make some criticism of current American practice and text-book teaching, with such suggestions as seem to me worth while. Before doing so, however, I wish to remind you that I am speaking simply of the fitness of the methods and ideas I mention for the needs of the general practitioner; and to say, too, that by "current American practice and text-book teaching" I do not mean the best practice of a number of very able and skilled men who are constantly making valuable additions to the literature of this subject in our various journals. I do mean the methods which have a very wide vogue among practitioners in America because of the insistence with which they have been taught by certain well known writers of popular text-books.

Two things especially distinguish American infant feeding from that of Europe—the use of mixtures rich in fat, and the very general adoption of the percentage system, commonly regarded by those who teach it as a triumph of scientific accuracy in this field. The "milk laboratory" of the cities is a natural outcome of these. I might well add as American peculiarities the lack of any well defined system of estimating the necessary amount of food, the routine use of lime water or other alkali, and the very great lack, at least so far as text-book teaching goes, of anything like regular clinical study of the child's digestive processes by the aid of the stomach tube and the chemical and microscopical study of urine and feces.

The use of whey and cream mixtures, the percentage system, and the milk laboratory have a common origin in the not unnatural idea of changing cow's milk so as to make it as nearly like human milk as possible, coupled with the old idea that the "casein curd" of cow's milk is the chief source of trouble to the infant, and the great thing to avoid. As to making cow's milk like human milk—"humanizing" it, in the English phrase—I wish to say that cow's milk and human milk are entirely different substances, having only a superficial resemblance; that we are constantly discovering new differences between them, and that it is useless to hope to make one like the other. Our problem is not to make human milk out of cow's milk, or anything else, but to find some substitute for human milk that the infant can digest and that satisfies the requirements of its nutrition.

As to the casein curd, and the differences in coagulability and digestibility of human and cow's milk casein, an immense deal has been written and talked about this subject—too often by men who never took the pains to find out whether the "curds" they saw in the stools really were casein at all, and a good deal of ingenuity has been spent in devising ways of preventing their formation. Once scepticism on this point was aroused, it didn't take more careful observers long to discover that

these so-called "curds" nearly always consisted chiefly of fat, and a reaction set in, which has not yet made itself so evident in America, but has led Czerny and Keller practically entirely to ignore any possibility of trouble with the proteids, while Walls claims almost invariable success in feeding children on undiluted fat-free milk. The question is by no means settled, but certainly the tendency of the day, backed by the opinion of practically all the men who have approached the subject from the side of experimental and clinical laboratory work, is to the opinion that far more harm has been done by overfeeding of fats than by the proteids. I can by no means subscribe to the opinion that cow's milk casein is never a source of trouble, and can testify very positively to the occasional, though rare, occurrence, both in vomitus and in the stool, of large, hard, and indigestible masses of unquestionable casein. I have made some attempts to study in the laboratory this question of curd formation, and though my results are very incomplete as yet, I cannot refrain from mentioning them here, because they have brought out some quite elementary facts which were new to me, and which I have failed to find mention of in the literature, possibly because they are so elementary. I undertook this work with the idea that I might find out something regarding the more common fat curds, especially those which consist chiefly of fatty acids, but very quickly found myself side-tracked. The old idea of the action of rennin in cow's milk mixtures was based on the phenomena observed in the test tube when milk and artificial gastric juice were mixed and allowed to remain at rest—a condition not commonly supposed to exist in the stomach—while recently the men who don't believe in the "curds," having adopted the very simple expedient of shaking the tube, have convinced themselves that troublesome curd formation cannot take place in the presence of the peristaltic motion of the stomach. I was fortunate enough to have at my disposal the apparatus used by Parke, Davis & Co. in their pepsin tests, in which the test bottles, immersed in a water bath at body temperature, are by means of an electrical apparatus subjected to gentle agitation at fifteen-minute intervals. With this apparatus I observed the behavior of various amounts of milk of differing fat content and dilution, when added to solutions of pepsin, hydrochloric acid and rennin in many combinations and strengths, and incidentally the effect of such substances as starch, lime water, soda, salt, and sodium citrate, which are more or less commonly used for a supposed effect upon curd formation. Briefly, I found, besides some other things of no especial interest here, that while I always obtained a firm clot where the mixture was at rest, except in the case of very high acidity, it was wholly impossible to get anything like a curd in the ordinary sense when the bottles were agitated and the amount of hydrochloric acid was anywhere near the normal. In fact, I could see absolutely no difference between the corresponding bottles with or without rennin, while the effect of increased hydrochloric acid was to dissolve more of the precipitate first formed, and, beyond the optimum amount, to delay digestion. When, however, hydrochloric acid was absent or very small in amount, a tough, firm clot holding in its meshes nearly all the fat, was invariably formed, and once formed, was acted upon very slowly by fresh acid and pepsin solution. The clots were larger and more rapidly formed and the digestion slower the more fat the milk contained.

These results recurred regularly under varied experimental conditions, and seem to me to indicate two possible reasons for curd formation, viz: deficience or

absence of hydrochloric acid at the time the milk enters the stomach; and deficient gastric motility resulting in an incomplete mixture of acid and milk. Further study of this would offer a clinical problem of no little difficulty. I believe deficient motility to be the more probable cause, and think that, sometimes at least, it may result from dilatation following the feeding of too large quantities of dilute milk. If this be true, it is an additional argument for greater concentration. I got little light from these experiments on the common, small fat curds, but am inclined to think that the large hard masses occasionally seen, consisting chiefly of fat, are probably remnants of the mixed clot I have described. However the casein curds may arise, they are not common, nor do I believe it very often possible to demonstrate any great trouble of any kind from cow's milk proteids alone, while fat disturbances are more common the more we look for them. It has occurred to me that under our prevalent system of feeding high proportions of fat there is a possibility of interfering with the acid secretion which seems to be so essential to casein digestion, and in that way giving rise to a proteid indigestion, which can be cured by reducing either fat or proteid. I have, then, little to say for the routine feeding of high fats and low proteids. I feel a good deal of diffidence about criticising an especial pet of the American pediatrist—whey and its various cream mixtures—because it seems rather presumptuous from my comparatively limited experience to throw doubt upon the observations and conclusions of a number of men for whom I have the greatest respect; but I have made faithful trial of whey and whey mixtures, and at the outset with no bias of scepticism, without being able to convince myself that they were of any real general value. Plain whey is a very easily digested, dilute food, practically free from fat, and leaving little residue for intestinal fermentation, and I can find occasional use for it in introducing a young baby to artificial feeding, and sometimes in other conditions, but while the whey and cream mixtures are well enough borne by the average child, I have found very few cases of difficult feeding in which they were a help.

The routine addition of lime water to the cow's milk mixture was based originally, so far as I can learn, upon an idea that it somehow modified the "curd," making it finer and more flocculent. This idea seems to have been laid aside, and the present excuse for lime water or any other alkali is that human milk is alkaline, therefore cow's milk should be made so. I have said already that these two kinds of milk are essentially different, and cannot be made alike, and I can see no sense in an assumption that because the child's natural food is slightly alkaline everything else that enters its stomach must be made so. The routine addition of alkali could be justified only by definite proof that it really facilitates milk digestion, and there is no such proof. As a matter of fact, it is easy to predict, from elementary chemical considerations, what the effect of lime water must be, and to confirm in the test tube the correctness of the prediction. There is a considerable percentage of free fatty acids in milk, and with these small amounts of lime water unite to form lime soap—insoluble and indigestible. Larger quantities diminish the acidity of the gastric juice, and if enough be present to make the whole mixture alkaline, rennin and pepsin are alike inactive, and the stomach is made more than ever a mere temporary reservoir. Just what the effect of this on intestinal digestion may be I cannot say; but I feel sure that it cannot be especially desirable. I believe that anything whose tendency is

to delay or inhibit the normal processes of gastric digestion—and I class sodium citrate here also—should be used only on very definite indications, and I am quite sure that I have seen intestinal indigestion which had no other cause.

The almost complete disregard in this country of anything like scientific determination of the proper amount of food for the child has always been a mystery to me. Fortunately the last two years have seen a great change in this regard in some of the centers, but it is still true that some of our best known text-books are wholly silent on the subject, and the last edition to one of them devotes a paragraph to a most ludicrous miscalculation of the caloric value of a milk mixture. Doubtless the writers of these books have a way, in their own practice, of determining how much of a given mixture a particular child should have, but their teachings are so very vague that few of their followers acquire definite ideas on the subject, and consequently under and over feeding, especially the latter, are exceedingly common here.

As a final criticism of accepted American teaching, I am going, in this age of scientific medicine, to risk an accusation of encouraging a reversion to less scientific methods by saying that to the average general practitioner, dependent upon home modifications, our beloved percentage system is a stumbling block rather than a help. To the man in the city, who has only to send his prescription to the milk laboratory, it may be well enough, though even there I have various reasons for preferring home modification; and if the specialist wants to think and work in percentages for the sake of greater definiteness and accuracy, certainly it is his business to be as scientific as he can. The calculation of percentage mixtures is not really so very difficult once one has familiarized oneself with the essentials of the process; neither is it so very simple, and it certainly is troublesome and somewhat formidable to the man who is not constantly doing it. Few trouble themselves to master the complicated looking tables prepared to assist them in these calculations, or to carry around with them a ready made series of calculations like Holt's; and there isn't the slightest necessity that they should. Percentage mixtures may be scientific; the objection I have to them is that they introduce the science into the wrong part of the feeding problem. It is of no real importance to the physician, the parent, or the baby, to know just the exact proportions of each ingredient in the food. The things one should be able to do are: to determine the requisite amount of food; to discover which food principal or principals are at fault in a particular case; and to change the proportions easily and simply. Percentage modification, for home use and for the general practitioner, is not of any help in any of these ways, and to my mind insistence upon it tends to divert attention from the real essentials to a needless complication. More profit is to be derived from the simpler process of calculating caloric values and needs.

Briefly summarized, then, my objections to the feeding method taught in most of our text-books are: that it is founded on theories that cannot be substantiated; that it is cumbersome to apply at a point where it should be simple; and that it is unscientific where science is most needed. Moreover, while I have not the figures I mentioned as desirable as to which of the various systems involves least deviation from the routine process, I feel very sure that of all the methods I have had a chance to watch in their application, the American requires the most variation and involves the most guess-work.

I haven't indulged in such very free criticism of American teachings without intending to mention something that I like better, and here I want to call your attention to the fact that the oldest and easiest of all methods of milk modification—the simple dilution of whole milk with the addition of sugar—is, with minor variations, the one that is still followed and found the most satisfactory by a majority of the real leaders in pediatric practice the world over, and it is especially noteworthy that nearly all of the men who by clinical and experimental laboratory work have made real additions to our knowledge of the digestion and metabolism of the child follow this practice, though the mixtures used are much more concentrated now than formerly. The amounts of fat, proteid, and carbohydrate may be varied quite as easily in this method as in any other, and it is beyond question the simplest one for use away from the milk laboratories. Personally, after some years of fussing with percentages, I have gone back to this as being fully as satisfactory, and much easier for routine work, and I am convinced that it has much more to recommend it to the general practitioner. There can be, of course, no objection to the calculation of percentages in a milk mixture by the man who wants to do it and can, nor should any one make the mistake of supposing that "percentage feeding" means necessarily high fats and low proteids.

If I now proceed to sketch briefly the methods which seem to me most easily managed in general practice, I do not wish to be understood as urging anything new, or original with myself. I have simply selected what seem to me the most sensible and useful points in the teaching of various men; and there are a great many all over the world who, feeling themselves under no special obligation to uphold the tenets of any particular school or system, are following very much the same plan. The first question to be met is always the choice of the milk. Cow's milk is of course the only thing to be considered in this part of the world. Every one teaches nowadays that mixed milk from the herd should be used in preference to that from the single cow, and that such milk as the Jersey and Guernsey is not so good for the child as the less fancied Holstein or Durham, so that I need not devote more time to these points, except to suggest an expedient which has been at times of service to myself. It occasionally happens that the only clean, reliable supply obtainable comes from a high bred Jersey herd. The chief objection to this milk is that it is very rich in fat, and that the fat globules are unusually large, and separate rapidly from the rest of the milk. I have several times instructed mothers who were obliged to use such milk to let it stand a few hours, until the thickest cream had risen, and then remove the top one or two ounces from the quart bottle, shake the remainder up again, and use it. This isn't strictly scientific so far as knowing the exact composition of the milk you are using, but it works pretty well. It is of course of the greatest importance that the milk be clean, and while it cannot be asked of the average practitioner to determine the number of bacteria, per c. c., it is reasonable to say that he should satisfy himself by personal inspection as to the cleanliness and efficient cooling methods of the dairy whose milk he recommends or uses. In spite of the increasing tendency in this country to the use of raw milk, the need for pasteurization or sterilization is not yet entirely done away with; and while it is well to remember that prolonged use of sterilized milk may occasionally produce scurvy, it is more important not to forget that, especially in summer, the countless bacteria in dirty raw milk may

do more harm in a day than sterilization could in months. Sterilization is still the rule abroad, is certainly the safer plan when there is any doubt regarding cleanliness; and the alterations in the chemical composition of the milk produced by it are probably not of so great importance as has sometimes been supposed. In fact, there is very good ground for believing that heated milk forms a fine, softer curd in the stomach, and is more digestible than raw milk. The most recent work on scurvy tends to discredit the idea that it is a result of using sterilized milk; and while modern discoveries of ferments and protective substances in raw milk indicate theoretical objections to heating, the balance at present seems to incline to sterilization under most conditions.

The nipple through which the child is fed deserves more attention than it usually gets—with regard not to its shape, but to the size of the aperture, which is usually too large, and allows a gulping of the milk that does not favor the proper intimate mixture with the gastric juice. The child ought to take at least ten minutes to empty its bottle, and to get a nipple which accomplishes this means going over the stock, selecting those with the smallest openings, and then, if necessary, enlarging these slightly with a hot fine needle. When, after use, they begin to allow the milk to flow too freely, they must be thrown away. The opening must not, of course, be so small that the baby is discouraged by the labor required to get any milk.

The matter of the proper interval between feedings has for a long time received no especial attention until within a few years Czerny and Keller have taken it up. These men are undoubtedly in some ways extremists, and one would hardly care to follow blindly all their teachings; but, nevertheless, one must admit freely that their absolute independence of tradition, their own studies of infant digestion and metabolism, and their laborious collection and free criticism of others work in their still unfinished book have been of great service; and that their conclusions are certainly worthy of careful consideration. They argue that even with the normal breast fed baby it requires at least two hours after a meal for the stomach to empty itself; that with artificial feeding the process is slower, requiring 2½ to 3 hours; and that consequently, with the ordinary two hour interval the stomach never has any proper chance for rest. They have accordingly adopted a routine of approximately four hours interval, with a limit of five feedings in 24 hours, and claim that the children are quieter and less fretful, and that there is less temptation to over-feed on account of the apparent hunger that comes from an uncomfortable stomach. They have also broken away from the rule of regularity for the child, which, excellent as it is in many ways, has perhaps been made something of a fad, to the extent of advising that the child's feeding hours be regulated somewhat by appetite and sleep, that it be not wakened for feeding, fed when it doesn't show signs of hunger, nor kept waiting too long when it is obviously hungry. This last seems to be common sense, and I have myself been very favorably impressed with the results of lengthening the feeding interval, though I am not in the habit of going quite so far as they do. I usually order from the start, not more than six feedings in 24 hours, and a minimum interval of three hours, and I am very sure that it is an improvement over the old way. The child who is in the habit of being fed every two hours will go through a day or so of fretfulness in getting readjusted, but will soon settle down, and I think that better sleep almost always follows the change.

As to the amount of food required, it is important to remember that, within

limits, it is not a question of ounces at a feeding, but of the total amount of nourishment received in twenty-four hours, and this amount is to be proportionate, not to the age of the child but to its weight. The only satisfactory method I know of for determining the approximate quantity needed is by estimating the caloric equivalent. Given a mixture the child can digest, in which the proteids are sufficient in amount, to replace tissue waste and provide for nitrogenous growth, the functions of the food principals are very largely interchangeable, so that it is only necessary to provide a total number of calories in a day properly proportioned to the child's weight. A good deal of work has been done in the caloric needs of the healthy child, and we are in possession of data showing pretty well the average requirement, and the variations possible in health. The average is from 40 to 50 c. per pound of body weight per day, and the variations from about 37 to 70. Heubner, who makes more of a point of this than any one else, put his standard for artificial feeding at about 55, which allows for failure to assimilate a considerable percentage; but it is well to remember that this too has been made something of a fad; that the calculation of caloric needs is only approximate, and that its chief value is to prevent gross errors in the line of over or under feeding; the final adjustment being made by observation of appetite, digestion, stools and weight. As under feeding at the start is safer than over-feeding it is well to begin with the lower figures and work up. The calculations are easily made. Ordinary whole milk contains approximately 20 calories per ounce, the top half of the bottle about 27, the top third about 35, the bottom two-thirds about 12.5, and added sugar 116 c. per ounce. As strict accuracy is not essential, small variations in milk composition need not be taken into account.

I published last year a table of caloric values of common milk mixtures and proprietary foods, designed to facilitate the application of this process to percentage feeding. To come now to the practical application of these principles, I find that a mixture of about one-third milk and two-thirds water, with sugar enough to bring the proportion up to 6 or 7%, is well taken by nearly all children, and I am in the habit of beginning with 6 ounces of whole milk and 1 ounce of sugar in a 20-ounce mixture, with no alkali.* These twenty ounces will contain 120 calories in the milk, and 116 in the sugar, or about 12 calories per ounce; so that in six 4-ounce feedings the child will get about 280 calories. When artificial feeding must be commenced in the first few days of life, I use a greater dilution, and often plain whey, for a few days. This mixture, as I have said, is perfectly well taken by the average child, and the food can be increased gradually until fair stools, reasonable gain in weight, and satisfaction on the child's part indicate that the proper amount has been reached. It is better, so far as possible, to increase the amount of nutriment by making the milk more concentrated, rather than by giving more at a time of the same mixture. As the proportion of milk is increased, the proportion of sugar becomes pretty high and will need to be reduced somewhat, but in any mixture less than half milk, one ounce in twenty can be pretty well given. Once the proper mixture and amount has been found, it is by no means always necessary to keep increasing the amount

*Since this paper was written my attention has been called to Bulletin No. 41 of the U. S. P. H. & M. H. Service on "Milk and Its Relation to Public Health." The articles in this Bulletin form together a text-book of the highest quality on the whole subject of milk and its uses, and the article by Schereschewsky on "Infant Feeding" is especially valuable for its very clear presentation of the principles involved, and the results of recent work. Schereschewsky is an advocate of Budin's method of feeding undiluted milk, which he describes in some detail. There is no denying the success of this method in the hands of Budin and his followers; but I am not as yet prepared to recommend it to the general practitioner because I believe it to be somewhat more difficult to apply successfully than a method of moderate dilution.

with the child's growth. It frequently happens that a baby who started out by taking 50 or 55 calories per pound will continue to gain steadily on the same amount of the same mixture when the caloric quotient has gone down to 40. In such a case the signal for increase is stationary weight. If the mixture I have mentioned is not well taken by a particular child, it is easily varied according to what it is that is not being well digested. The fat is reduced by taking milk from the lower part of the bottle by siphoning—the proteid by taking it from the upper part and using less, as the upper part has a higher caloric value, or by simple dilution. Sugar is, of course, easily changed, but seldom needs it. Changes of a fraction of a per cent of one or the other principal are not, in my opinion, of much use for the general practitioner. One gets more definite results by making a radical change in one direction or another, and then perhaps working back gradually. Small changes are not hard to make, however. If, for instance, on indication of fat indigestion one has resorted to siphoning out the bottom two-thirds of the bottle and after a few days the troublesome symptoms have disappeared, a little more can be siphoned out every day, and the milk used taken from this until a point is reached where everything is satisfactory. There is a good deal that I might say about ways of varying these mixtures if I were trying to write a text-book, but I must proceed to what I have several times said is the most important thing in infant feeding. It makes little difference to me what method or system a man may follow, if only he has some definite idea how to go about it to find out what is wrong when his system doesn't work; and it is just here that most failures occur, because guessing so often takes the place of intelligent study. The most skillful men are reduced to guessing occasionally, and the best is the one who does the least of it. There are some indications of trouble to be looked for on the part of the stomach. Regurgitation of any considerable amount is usually a result of over-feeding in quantity, while spitting up of small amounts some time after feeding may be an indication of too much fat or too frequent feedings. Real vomiting in a baby usually indicates something more than a simple error in feeding. I am inclined to think that the stomach tube might be used more than it is in studying the child's digestion. I have suggested possible observations on hydrochloric acid and motion; but I refer here to the question of whether the stomach is properly emptied before each feeding; and if not, what the character of the residue is. The tube comes in occasionally, also, in therapeutics, when the stomach has been irritated or dilated by improper feeding. It is exceedingly easy to use in the infant.

The most important indications, however, are to be drawn from the stools, and there is nothing that will help the practitioner in this line of work so much as careful, intelligent study of the infant's feces. I don't mean by this elaborate chemical and bacteriological study, but observation of ordinary macroscopic and microscopic appearances, and such simple chemical tests as the reaction to litmus. Dr. Rich has done a real service by translating Selter's little monograph on this subject, for while Selter has by no means covered the whole ground, and I consider some of his conclusions mistaken, I know of nothing better, and am sure that almost any one will find valuable suggestions in it. I can do no more here than indicate very roughly how to get information from the feces. The normal breast milk stool is slightly acid with a not unpleasant, aromatic odor; the cow's milk stool is normally slightly alkaline, and has a more offensive odor, due to

some proteid putrefaction, and suggesting the odor of the adult's stool. Slight variations in reaction and odor are normal, but distinct alkalinity or strong acidity are pathologic in the breast stool, while distinct acidity or strong alkalinity are pathologic in the cow's milk stool. Cow's milk stools are almost always less frequent than those from breast milk, and increased frequency is a more definite indication of trouble in artificial than in breast feeding. A little practice enables one often to draw valuable conclusions from abnormal odor of the stool. The sharp sour smell of carbohydrate fermentation is, for instance, quite distinct from the rancid odor of the split fats, while putrefaction of nitrogenous matter is readily differentiated from both. It is not, however, to be supposed that putrefaction always means proteid indigestion. It occurs as well with fat over-feeding, especially with the "soap stool," and may indicate only too long a stay in the colon.

The proper color is the well known butter yellow—usually several shades lighter in the cow's milk stool. Starches, malt sugar, etc., give a brown color. Wide variations in color are common. Stools containing an excess of free fat are usually light colored, greasy and soft. Fatty acids and soaps make the stool firmer and give a grayish or dirty white color. The light green, dark green and almost black stools over which mothers are always so excited, usually owe their color to altered bile pigment, though I have seen green stools due to pyocyanin. The precise reason for the appearance of biliverdin is not known, but it usually (not always) occurs in acid stools, and is probably due to abnormal bacterial activity. It is not in itself so serious as it looks and can often be corrected by making the stools alkaline by giving lime water. Excess of casein or overfeeding in general may produce firm, light-colored stools.

In consistency, the stools should be smooth, pasty, and in the young baby not formed. The cow's milk stool is somewhat firmer. The broken, lumpy appearance often seen with small, soft, white or yellow particles, commonly called "curds," is usually due to free fat. Fatty acids and lime soaps give a firmer, more homogenous stool. Real casein curds when present are likely to be rather large, hard, rubbery and somewhat translucent. Thin, watery stools may result from almost any kind of feeding error, but when they appear one may usually conclude that fermentation and intestinal irritation are present. "Foamy" stools commonly come from carbohydrate fermentation. Mucus, normally seen only in the first days, may appear as a result of any irritation. In general, the more formed elements it contains the greater is the disturbance indicated, and the more intimately mixed it is with the stool the higher up in the intestine is its source. Pure mucus, or mucus smeared over the outside of the stool, comes from the colon.

The routine examination of the stool consists in noting the macroscopic appearance of the fresh stool (obtained if necessary by the use of the oiled rod or the soap stick), its amount, consistency, color, odor, and reaction to litmus—all of these preferably with a bit from the interior of the stool rather than from the surface. Then a bit should be rubbed upon a slide with water and examined microscopically. Here one should note free fat, in separate drops or little lakelets, the needle like crystals of free fatty acids, masses of lime soaps, mucus, etc. The masses of undigested casein, once so much talked about, are agreed now by the best observers to be soaps, and it is doubtful whether undigested casein can be identified in the stool except as definite curd lumps.

Any attempt to classify alterations in the stool according to errors in feeding

is made difficult by the fact that a given mistake in feeding may result in one of several abnormalities in the stool; the difference depending usually on whether or not certain bacteria have found intestinal conditions favorable to abnormal activity on their part.

Simple under feeding can usually be diagnosed by stationary or falling weight, with a caloric equivalent under the average, marked hunger often, infrequent small stools, usually soft but sometimes firm and dry from over long stay in the intestines; but with no especial abnormalities. In over-feeding we are likely to get also stationary or falling weight, with caloric equivalent over the average; spitting up of food, occasionally vomiting; spurious hunger resulting from gastric or intestinal discomfort; and often meteorismus. Constipation is the rule here, with what Czerny and Keller describe as the soap stool—dry, firm, gray or dirty white, usually alkaline, with the odor of putrefaction. The constipation is probably due to the dryness resulting from the fact that the lime soaps, of which these stools are largely composed, carry little water. In either under or over feeding eventually bacterial activity may set up a fermentation resulting in diarrhœa, with thin stools, often containing mucus. Excess of fat, or, what is very much the same, inability of the infant to make use of a normal amount, is likely to cause some gastric distress and spitting up of greasy slimy material. The stools, if they contain much free fat, are commonly soft, somewhat lumpy, shiny or greasy in appearance, quite acid in reaction, with a somewhat rancid odor, and are usually, but by no means always, rather small and frequent. Fermentation of any extent causes the appearance of less free fat, more fatty acids, higher acidity, and a more offensive sour smell. There is very likely to be a distinct tendency to diarrhœa, with mucus, and possibly a green color. The "soap stool" is also common with over-feeding of fat.

Genuine over-feeding with sugar, or intolerance of ordinary amounts, is rare; but fermentative processes may be set up in the intestines in which the sugar is acted upon, in which case we are likely to have flatulence, thin, foamy, acid stools, with a disagreeable sharp smell, and often a green color and mucus. If starch is being added to the milk mixture, undigested particles are easily detected under the microscope by the addition of a little iodine. Starch fermentation gives similar stools to those observed with sugar, in which are often seen large yeast-like cocci, stained by iodine, which some consider diagnostic. Proteid disturbances are not very common, and there is no unanimity of opinion as to their diagnosis. I do not agree on this point with Selter, who, as a pupil of Biedert, is bound to uphold his ideas. It seems to me that the common sign of slight proteid trouble is a rather firm, homogenous stool, somewhat dark in color, rather strongly alkaline, and with a good deal the odor of the adult stool, while if the condition becomes more marked diarrhœa may set in, with thin stools, usually dark and very offensive.

As to the therapeutics of these conditions, and variations and combinations of them that I cannot go into here; one ought always to proceed on a definite plan, making as accurate a diagnosis as possible, and making changes in the food systematically, with a clear reason each time. Often a change in the direction to which suspicion points will clear a doubtful diagnosis. As I said before, more definite and satisfactory results will be obtained by radical rather than by slight changes. If secondary fermentative processes are present, it may be necessary to treat them for a few days like specific intestinal infections, before the indicated change in the food will

have its effect. The bacteria involved often flourish because the reaction of the intestinal contents favors their growth, and it is often useful to change this radically, by feeding buttermilk, lime water, etc.

Constipation, the most troublesome single symptom we have to deal with, deserves a chapter of its own. Here I can only enumerate a few common causes. Under feeding, over feeding, and excess of fat are the commonest, and suggest their own remedies. Sluggish intestinal movements are probable when the amount and character of the food are evidently nearly correct, and the stool when passed seems normal. This suggests massage, and perhaps occasional stimulus to the rectum by the oiled rod or the soap stick. Slight constipation is often made worse by routine use of enemata or glycerine suppositories; and constipation with pain at stool is more often due to very small fissures than the man who doesn't habitually look for them would believe. It is not so very uncommon that, when we have corrected all the faults we can find, the constipation persists. Sometimes we may get help here by substituting something more laxative, such as maltose (most cheaply obtained as Mellin's Food) or starch and malt extract, as in the well known "malt soup" of Germany, for the milk sugar. If this fails, I have had better luck with the addition of small amounts of milk of magnesia to the bottle than with anything else, and if the feeding is proper, normal movements usually come in time.

I feel that this paper has already drawn itself out to a tedious length, and will close with a brief reference to my introductory topic—the relations between general practitioner and specialist. I believe that these cases belong to the general practitioner as long as he is able to handle them, and that will depend upon the amount of special knowledge of the subject he may have acquired. I have seen some general practitioners more skillful in practical infant feeding than some specialists. A very good rule for any practitioner as to when to call in help is, to make use of all the definite diagnostic and therapeutic knowledge he has, and when he finds himself resorting to guess-work, give it up. The man who has to guess from the beginning would better be in some other business.

PRACTICAL VENEREAL PROPHYLAXIS

Denslow Lewis, of Chicago, believes that the time has come for general instruction of the public as to the rational prophylaxis of venereal disease. Much of this instruction must be given by the physician, and several of the great medical societies have become enough awake to this matter to appoint committees to devise means for this education. Public sentiment must be created which will allow of and demand such instruction in the daily press, which has always refused to consider such articles as publishable. The laws of the United States as to the transmission of obscene literature by the mails are so inexact and contradictory that it is difficult to transmit such information without being arrested and fined as a sender of obscene literature. These laws should be amended so as to make it possible for responsible physicians to transmit and publish such information without danger of being held responsible to the postoffice authorities. There should be some sort of registration and examination of prostitutes; not the European system of legalization, but such a system as shall oblige the examination of prostitutes by the proper authorities so as to prevent them from propagating venereal disease. We must teach the hygiene of sexual life to children and to parents. Thus abortion, illegitimacy, and infanticide, as well as venereal disease will be limited. Every school should teach it by means of properly instructed teachers or physicians. Prophylaxis in children will be favored by the removal of all sources of irritation about the genitals. The boy and girl as well should know that truth about sexual matters, and not learn it in a garbled way from associates. Women's clubs, secret societies, and gatherings of women are appropriate places for the instruction of parents.—*Medical Record,* October 12, 1907.

The Journal of the Michigan State Medical Society

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JULY

Editorial

The Cancer Problem was the subject of the oration on surgery by Crile at the meeting of the American Medical Association. It was an optimistic contribution, full of encouragement and replete with enthusiasm for an ultimate solution of the problem. It was delivered before what was probably the largest medical audience ever gathered for a purely scientific discussion, and the close attention accorded the speaker indicated the great interest which the profession has in the subject. The gloom which pervades the writings of most authors on cancer was entirely lacking and happily so, for many left the meeting imbued with a desire to study the question more carefully and encouraged by the belief that much progress is after all being made.

We have been led to believe that cancer is greatly on the increase. Statistics gathered at the state institute at Buffalo would seem to show that today carcinoma is five times more frequent than during the middle of the last century.* Crile thinks that the statement is open to criticism, inasmuch as there are several factors which may explain this apparent increase. It may be accounted for by the greater number of correct diagnoses and by the general increase in longevity, due to the fall in mortality from infectious diseases and decrease in infant mortality. On the contrary there are more cases of cancer cured each year. Crile believes, with Bashford and Murray, that absolute statistics on cancer incidence are not now available; whether or not carcinoma is on the increase, the fact remains that the cancer death rate is tremendous. Dührssen says: "More women die annually of cancer in Germany than were men killed in the Franco-Prussian war." Copman says: "Of the people living throughout the civilized world—Europe and North America—who are over thirty-five years of age, one woman in eight and one man in twelve will eventually die of cancer. Last year 7,000 persons died of carcinoma in New York State alone, over half as many as died of tuberculosis. Crile estimates that there are 80,000 cases today in the United States, and possibly 1,000,000 in the world. "Not only," says he, "does cancer destroy countless lives, but it destroys them by a method of merciless torture. To die from an accident or from an acute infection is a matter of days or weeks; to die from cancer is a matter of months or years, and this is a period not alone of suffering, but of suffering without hope—a horrible species of cellular cannibalism."

In this address, Crile had nothing to say about the parisitic theory, but laid considerable stress upon precancerous conditions, i. e., chronic irritation, ulcer, scar, hyperplasia, and innocent tumor. These precancerous conditions are potential cancers. They represent the prophylactic stage of cancer. The profession needs enlightenment upon the importance of these conditions and the laity should be educated as to their meaning.

*Park. Am. Jour. Surgery, May, 1908.

Has the limit of operative measures been reached? Many would answer this question as did Ambrose Paré, in speaking of the control of hemorrhage by the cautery—"this is the keystone of the arch, no further advance can be made." If one were to consider only the operative technic, it would seem that nothing can be added to the Halsted operation for carcinoma of the breast or to the Wertheim operation for cancer of the uterus. Crile has shown, however, that the limit of surgical risk can be widely extended by the direct transfusion of blood, thereby rendering patients fit for operation who would otherwise be hopeless surgical risks. Studies in immunity, recently made, would also tend to show that there are operative possibilities beyond those now generally recognized.

Ehrlich, Loeb, Gaylord and others have demonstrated that an immunity to cancer can be established in animals. Transplantable sarcoma in dogs can be cured by a maximum bleeding and overtransfusion from an immune dog. Crile thus cured nine of eleven dogs and found that those cured became themselves immune. He also has six patients who have been apparently cured of round and spindle cell sarcoma who may be available for immunizing purposes. The idea of thus establishing a group of immunes who will furnish blood for curative purposes is of course somewhat Utopian in its conception, but it is at least suggestive and may prove an immense step forward in extending the limits of operative cure.

* * *

The Detroit Society for the Study and Prevention of Tuberculosis rose in a day from a state of impecunious impotence to financial power. This was accomplished by the "Tuberculosis Charity Day" donations, resulting in net receipts of over $10,900. The "day" was a repetition of similar efforts in Columbus, Ohio, and in St. Louis, and was under the management of specially chosen women executives, whose enthusiasm and persistence inspired a large force of co-workers. The collections will mean a good beginning of active work against tuberculosis in Detroit. Another year "Tuberculosis Day" will be repeated with far greater success, by utilizing ways and means which were barely thought of this year; it is to be hoped that each succeeding year will see a repetition of this worthy movement and that in proportion as it grows, so may the prevalence of tuberculosis be decreased.

The administration of the fund has been placed in the hands of a large and representative committee, who will ensure confidence and beget interest. Many methods of expending the money have been suggested, but it remains for those who most intimately know the situation to decide upon the wisest method, and several such individuals are upon the committee.

Other local societies in Michigan cities might with profit imitate the work in Detroit. The wheels are easy to set in motion, popular interest is everywhere ready to be aroused, and committees might gain many suggestions from the Detroit workers, who would be only too glad to allow others to gain by their mistakes and their successes.

* * *

Heart Block. In every field of scientific endeavor we find an example of the aid that laboratory investigation has been to practical work. None has profited in this manner more than the clinician. As a brilliant example of this in recent years stand the results of the impetus that the modern study of the causes of heart beat has given to the explanation of the Stokes-Adams syndrome. The masterful experiments of His, the remarkable work of Tawara on

the continuity of heart muscle from auricle to ventricle, Erlanger's fascinating demonstrations on the effect of clamping the auriculo-ventricular bundle, Carlson's researches showing the automaticity of heart muscle in lower mammals, and many other notable pieces of work have added proof to the theory first advanced by Gaskall in 1881 and later substantiated in nearly every respect by Engelmann, that heart beat is conducted through the muscular network of the heart. Howell reviewed this whole subject in an excellent manner two years ago.

The production of heart beat and the myogenic theory are closely interwoven with the explanation of heart block or Stokes-Adams disease. This symptom complex was first described in a case of an English revenue officer, 68 years of age. Adams observed this patient in many syncopial attacks during which the pulse fell to about 30 per minute. Nearly twenty years later Stokes (1846) published two cases with pseudo-apoplectic attacks and slow pulse. He noticed during these atacks that the pulsations in the jugular were "more than double the number of the manifest ventricular contractions."

The physiologist has been aware of the existence of heart block in animals for a long time. It has been seen in the exposed heart of many dying animals and could be produced very readily by the destruction of parts of the heart muscle. It was also known that an increased excitability of auricle or irritation of the vagus at times produced this phenomenon.

It remained for His to discover that there existed a distinct muscular connection between the auricle and the ventricle in mammals. He described this connection at first as starting in fine ramifications in the posterior wall of the auricle and extending to the septum. It passes along the auricular ventricular groove and ends as it begins in branching fibrils that are distributed to the walls of both ventricles. In 1896 His demonstrated at the International Physiological Congress in Bern tracings showing that the effect of the destruction of this remarkable bundle of fibers was independent contractions of the auricle and ventricle. A few years later he had the good fortune to observe a case of heart-block and explained the symptoms upon the basis of the demonstrations he had made in animals.

Erlanger took up the work a few years later and obtained tracings from the auricle and ventricle of a dog's heart in which a clamp had been applied about the bundle of His. He was able by tightening and loosening this clamp to block impulses from the auricle to the ventricle. He could establish various degrees of this block, and, whereas the auricle would beat at a normal rate, the ventricle would assume an independent rhythm of its own. (That heart muscle has this automaticity was first demonstrated by Gaskall in 1883 with the heart of the tortoise. Since that time Engelmann and Ringer have shown that strips of heart muscle, when kept in a normal saline solution, may beat with an independent rhythm for many hours.)

The anatomical study of the bundle of His has been pursued with great care since its earlier description. Tawara, Keith, Wenckebach, and others have followed out numerous dissections. One of the most recent studies on its histology by Lydia M. DeWitt shows it as a finely ramifying structure beginning probabily in the sinus, coursing the venous channel through the auricle (right), collecting in a firm band at the auriculo-ventricular septum and dividing again into two branches, one for each ventricle. The fibers again divide and branch out in the musculature of the ventricles.

Since this remarkable research work has been published clinical reports of

cases of heart block have been numerous. In each and every one the attempt has been to show some lesion of the bundle of His. Inflammatory changes, arteriosclerosis, fatty degeneration, and gummatous involvement in some part of its course have been disclosed. In each case of severe heart block the symptoms of epileptiform or apoplectiform seizures followed by cyanosis and unconsciousness with marked bradycardia and rapid jugular pulse, were the prominent features. The attacks may last for a few moments or be prolonged over a variable length of time. Most cases occur in individuals above the age of fifty.

The careful examination of all patients presenting the Stokes-Adams syndrome with the simultaneous tracings of the radial and jugular pulses will assist in verifying the explanations now generally adopted as to the cause of heart-block. They will, in addition, serve to eliminate those cases of slow pulse due to extrasystole and other causes.

♣ ♣ ♣

The Manistee meeting proved one of the most attractive held within recent years. Especially was this true of the social features. A marked feeling of good fellowship pervaded the meeting and there was not a ripple of dissention to disturb the pleasure of those present. The registration was not large but was up to the expectations of those who had planned the meeting, and there were a number of new faces present. The weather was ideal, the bracing air of Lake Michigan acting like a tonic on those who were fatigued by the excessive heat prevailing over the southern part of the state during the week previous to the meeting. The boat ride, barbecue, dance and the Thursday reception were unusually attractive and much enjoyed by all who were fortunate enough to attend.

The section work was marred by the failure of a number of essayists to appear. There were quite a number who could not get places on the program this year. To have twelve members out of forty-five on the program fail to appear is discouraging.

The addresses by Dr. Patrick, of Chicago, and Dr. Bloodgood, of Baltimore, were inspiring and were enthusiastically received.

Our newly elected president, Dr. A. I. Lawbaugh, of Calumet, is well known throughout the state and particularly throughout the upper peninsula.

A full report of the meeting will appear in the August issue.

The following members registered. (Names appearing in italics were delegates.)

Antrim: *J. C. Gauntlett.*

Berrien: *F. R. Belknap,* E. J. Witt, W. L Wilson.

Bay: A. Stealey.

Benzie: E. J. C. Ellis, *G. O. Edmund,* E. L. Covy, C. P. Doyle, M. Frankfort.

Calumet: *S. S. Lee.*

Chippewa: *G. J. Dickison,* C. J. Ennis, E. H. Webster.

Calhoun: A. W. Alvord, W. Haughey, W. H. Haughey, J. F. Morse, *R. M. Gubbins, J. L. Ramsdell.*

Eaton: *A. H. Burleson,* E. M. Paine.

Emmet: *J. J. Reycraft.*

Genesee: *R. G. Murray.*

Grand Traverse: W. M. Boylan, H. B. Garner, F. D. Munson, *E. B. Minor,* J. Shilliday.

Houghton: *R. B. Harkness,* A. I. Lawbaugh, G. W. Orr, J. B. Quick, C. H. Rupprecht, E. T. Abrams.

Huron: *B. Fiedlaender.*

Ingham: *S. Osborn,* W. G. Wight.

Isabella: *A. T. Getchell,* D. H. McRae, C. R. W. Southwick.

Jackson: D. E. Robinson, *Martha C. Strong.*

Kalamazoo: *P. T. Beller,* R. E. Balch, E. J. Bernstein, *J. H. Crosby,* Geo. D. Carnes, A. W.

Crane, B. N. Epler, G. F. Inch, H. Ostrander, A. H. Rockwell, F. Shillito, A. S. Youngs.

Kent: J. Brady, *W. J. Du Bois, J. D. Brook,* F. J. Groner, C. H. Johnston, W. H. Kassabian, F. J. Lee, S. L. Rozema, L. A. Roller, R. H. Spencer, F. C. Warnshuis.

Lapeer: *W. J. Kay,* H. E. Randall.

Manistee: *W. E. Coates,* J. H. Christenson, J. B. Ewers, E. S. Ellis, R. F. Foster, E. M. Keough, J. A. King, H. MacMullen, A. A. McLarty, G. Knowles, C. A. Norconk, A. S. Payne, H. D. Robinson, L. S. Ramsdell, W. H. Steele, E. J. West.

Mason: A. W. Abbott, T. J. Foster, F. W. Heysett, G. O. Switzen, *W. H. Taylor,* W. C. Martin.

Marquette: T. A. Felch, *A. W. Harnbogen.*

Montcalm: H. L. Bowers, *D. R. Black,* J. Purdon, Wm. H. Belknap.

Mecosta: W. T. Dodge, T. S. Griswold.

Monroe: *C. I. Southworth.*

Muskegon: *G. J. Hartman, G. F. Lamb.*

Newaygo: W. A. Kuhn.

O. M. C. R. O.: *E. L. Ford,* S. N. Insley, A. C. MacKinnon.

Osceola: Thos. F. Bray, H. L. Foster, *E. N. Heysett.*

Ottawa: *H. Kremers,* H. J. Poppen.

Schoolcraft: *G. M. Livingston.*

Shiawassee: E. Elliott, *A. M. Hume.*

St. Clair: *C. B. Stockwell,* M. Willson.

Tuscola: *W. C. Garvin,* A. L. Seeley.

Tri: J. W. Decker, J. F. Gruber, B. H. McMullen, E. A. McManus, C. S. Purdy, O. L. Ricker.

Wayne: G. V. Brown, L. Connor, F. Carrow, A. N. Collins, *J. E. Davis,* W. M. Donald, J. E. Gleason, J. H. Carstens, *L. J. Hirshman,* H. J. Hartz, P. J. Livingstone, S. P. Lackajewski, W. P. Manton, Wm. F. Metcalf, J. A. MacMillan, J. D. Matthews, C. S. Oakman, W. R. Parker, R. Parmeter, I. L. Polozker, *F. W. Robbins,* H. M. Rich, B. R. Shurly, E. L. Shurly, *Wm. C. Stevens,* B. R. Schenck, T. F. Spillane, E. B. Smith, J. W. Vaughan, W. Warren, *V. C. Vaughan, Jr.*

Washtenaw: *C. D. Camp, C. G. Darling,* G. Dock, J. C. Solis, V. C. Vaughan.

Book Notices

Diseases of the Heart. By Prof. Th. von Jurgensen, of Tubingen; Prof. L. Krehl, of Griefswald, and Prof. Dr. L. von Schrotter, of Vienna. Edited, with additions, by George Dock, M. D., professor of medicine, University of Michigan, Ann Arbor. Octavo of 848 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1908. Cloth, $5.00 net; half morocco, $6.00 net.

It would be wholly superfluous to remark on the importance to English speaking practitioners of a translation of any one of the volumes in the Nothnagel series. The present volume has perhaps a peculiar value because, although German clinical and laboratory research is the source of a very large part of our modern knowledge of cardiac physiology, pathology and therapeutics, we have until now lacked an English translation of any one of the several very good German books upon the subject.

The book is made up of monographs on the various affections of the heart, and is to be looked upon and appraised rather as an expression of the views of the great clinicians and teachers who have collaborated in producing it, than as a compendium of all existing knowledge and practice. As Doctor Dock says in his preface: "I think most readers will agree with me when I state my belief that the lack of a simple division of the material and a common point of view is more than made up by finding in one book the sound learning and wide clinical experience of Professors von Jurgensen and von Schroetter, and the broad and deep training in anatomy, physiology and pathology, as well as the excellent clinical observations of Professor Krehl."

For the ordinary reviewer to attempt criticism of the opinions of men of such commanding and authoritative position in the world of medicine would be mere impertinence, and needless, too, because the great interest of the book lies chiefly in the personal point of view maintained throughout. It remains, then, only to explain the scope and division of the work, and note the excellence of each man's part.

The first section "Insufficiency (Weakness) of the Heart," by von Jurgensen, gives us a view point of cardiac disorders which is somewhat novel and exceedingly important. Jurgensen considers cardiac weakness as an insufficiency of the heart, from whatever cause, for the performance of the work demanded of it. Pointing out the increasing tendency to place the responsibility

for this condition almost wholly on the heart muscle, and to consider disturbances of the nervous mechanism as of secondary importance, he proceeds to a classification of the causes of insufficiency, with a very lucid explanation of the way in which they produce the result, and a very interesting and adequate discussion of the symptomatology and therapeutics. The two following sections on "Endocarditis" and "Valvular Disease," also by Jurgensen, are complete and well handled from every point of view, and are rendered additionally instructive by very free citation of illustrative cases.

Krehl's section on "Diseases of the Myocardium and Nervous Diseases of the Heart" is a remarkably satisfactory presentation of a very difficult subject. Myocardial disease is to most physicians perplexing and hard to understand in its many manifestations, and unsatisfactory from the therapeutic standpoint. Krehl has dealt with it exhaustively and clearly, and has given an admirable discussion of therapeutic methods and the indications for their use. The chapter on neuroses brings to bear a wealth of clinical observations and sound common sense on a number of conditions which are still rather obscure.

Schroetter's concluding chapter on "Diseases of the Myocardium" is also of a high standard of excellence, but rather less exhaustive, and not so fully illustrated by case histories as the others.

The editorial work is quite above criticism. Doctor Dock has maintained throughout the attitude which is becoming to the editor of such a book, but which is far too commonly departed from, in that he refrains from interpolating his personal opinions. His additions to the text are made only to incorporate important work which has appeared since the publication of the German edition, and he has covered this thoroughly and with the good judgment which one would expect. The personal attention he has given to the revision of the translator's work is evident in the style of the English used throughout, which is unusually good for a translation.

Gonorrhea, Its Diagnosis and Treatment. By Frederick Baumann, Ph. D., M. D., Professor of Genito-Urinary Diseases in the Reliance Medical College, and Instructor in Dermatology and Venereal Diseases in the College of Physicians and Surgeons, Chicago. Fifty-two illustrations in the text. Cloth. Pp. 206. Price, $1.50. New York, D. Appleton & Company, 1908.

This monograph is a short, concise exposition of gonorrhea in its various phases. It opens with chapters on anatomy, bacteriology and pathology, which give all the essentials in a satisfactory manner. In the chapter on diagnosis considerable attention is given to urethroscopy, and but little to cystoscopy. In that on prognosis, the author says that "no method of treatment will prevent relapses, which are determined by the pathology of the condition. Suitable treatment can be instituted early, however, and the severity of relapses thus diminished."

Baumann employs the various balsamic emulsions in treatment and shows how they are beneficial; prefers silver nitrate to the organic salts of silver, and gives the preference to injections rather than irrigations.

Gonorrhea in the female is touched upon in Chapter XIV., but the discussion is limited to a consideration of the disease as seen in the urinary organs. Cystoscopic examination and ureteral catheteriaztion are recommended in every case where infection above the bladder is suspected.

The chapter on metastasis is quite inadequate. Consideration is given only to gonorrheal arthritis.

Throughout the teaching of Oberlaender and Kollmann has been followed.

An Introduction to the Study of the Infant's Stool. By Paul Selter, M. D., Solengen, Germany. Translated by Herbert M. Rich, B. L., M. D., Detroit. Published by the Detroit Medical Journal Company, Detroit, 1907.

The importance of the examination of the faces in digestive disorders has been emphasized more and more during the past few years, for with the immense strides which have been made in the study of the physiology of digestion, interpretation of the findings in stool examinations has been easier and more explicit. In no branch of medicine is this examination of more importance than in pediatrics. It is the *sine qua non* of success in the artificial feeding of infants.

Previous to this translation there was no adequate treatise on the fundamentals of examination of the child's stool and the translator has rendered a real service to American practitioners by making the work of Selter available.

The translation is divided into five sections, as follows: I. The Fate of the Food Elements in the Alimentary Canal. II. The Characteristics of the Infant's Feces in Health and Disease. III. Macroscopic and Microscopic Examination. IV. Determination of the Type of Digestive Disturbance from the Examination of the Stool.

The ground is well covered and illustrative cases serve to impress on one the teaching of the text.

Disorders of the Respiration and Circulation. By Professor Edmund von Neusser. Translation by Andrew MacFarlane. 1908. E. B. Treat and Company, New York. Price $1.25.

Like a previous clinical treatise reviewed in this Journal, this work on disorders of the respiration and circulation deserves our best commendation. The author covers in a satisfactory manner the toxic, auto-toxic, infectious, neurotic, metaloblic and neuritic causes of bradycardia. The treatment and prognosis in each instance is carefully considered.

Part II. on Tachycardia takes up this condition in various acute and chronic infectious and in the constitutional diseases. An excellent short discussion on paroxysmal tachycardia follows. In this the author rightly says that its etiology is absolutely unknown.

A useful appendix on the physiology and pathology of the heart in these conditions concludes the volume.

Atlas and Text-Book of Human Anatomy. Volume III, completing the work. By. Prof. J. Sobotta, of Wurzburg. Edited, with additions, by J. Playfair McMurrich, A. M., Ph. D., Professor of Anatomy at the University of Toronto, Canada. Quarto of 342 pages, containing 297 illustrations, mostly all in colors. Philadelphia and London: W. B. Saunders Company, 1908. Cloth, $6.00 net; half morocco, $7.50 net.

Few books have been accorded a more enthusiastic reception by the reviewers than have the three volumes of the Sobotta-McMurrich atlas of anatomy, and justly so, for they form a magnificent series of plates, rarely if ever equaled.

The third volume concludes the vascular system and includes the entire nervous system, together with the organs of special sense. One feature which appeals to us are the plates which include both arteries and nerves. One is accustomed to see them at the same time in dissections and the relations are much better impressed upon one when they are illustrated in one and the same drawing.

The plates for these volumes, made in Vienna, represent the tissues as seen in the injected subject in a remarkably realistic manner. The text is well written, clear and explicit, and a great credit to McMurrich.

It has been said that every physician should review his anatomy once in three years. It is surely worth while to do so. If it cannot be done in the dissecting room, no better investment can be made than in this series of three volumes.

Milk and Its Relation to the Public Health. Bulletin No. 41, Hygienic Laboratory, U. S. Public Health and Marine Hospital Service. 757 pp.

Probably many physicians are not fully aware of the great scientific and practical value of the publications of some branches of the public service. This volume in particular deserves to be called to the attention of practitioners because of the prime importance of the subject to every one and the admirable and complete manner in which every phase of it is treated.

The book contains 22 sections, written by different men connected with the service. Six of the sections deal with the part played by milk in the spread of specific infections, including typhoid, scarlet fever, diphtheria, tuberculosis, Malta fever, milk sickness, the zoo-parasitic diseases, etc. Eager's article on "Morbidity and Mortality Statistics as Influenced by Milk" contains, in brief space, some very interesting information, while Wiley's section on "Ice Cream" ought to be read by everyone interested in clean and pure food. Various subjects relating to the procuring and distribution of good milk, such as dairy sanitation, the sicknesses of cows and their effects on the milk, bacteriological examinations, certification, etc., are admirably dealt with in several very complete chapters. Probably the average physician would take most interest in the articles on "The Chemistry of Milk," "Pasteurization," and "Infant Feeding." The chemistry of milk and the effects produced upon it by digestive ferments, heat, and other agencies, are not so generally understood as they should be, and the sections on chemistry by Kastle and Roberts, and on pasteurization, by Rosenau present our knowledge of today clearly and simply, in a way to remove many misconceptions. Schereschewsky's article on infant feeding fills a long felt want, in that it sets forth the modern scientific progress along this line better, we think, than does any other publication in the English language. Schereschewsky is an advocate of Budin's system of feeding sterilized whole milk, and gives a very good description of its application to the normal child. He does not go into the therapeutics of digestive disturbances.

The volume as a whole is the most complete

treatise we know of on the disorders caused by milk and their prevention.

Diseases of the Nose and Throat. By D. Braden Kyle, M. D., Professor of Laryngology and Rhinology, Jefferson Medical College, Philadelphia. Fourth Edition, thoroughly revised and enlarged. Octavo volume of 725 pages, with 215 illustrations, 28 in colors. Philadelphia and London: W. B. Saunders Company, 1907. Cloth, $4.00 net.

The fourth edition of this work has recently been presented to the medical profession. Many new articles and illustrations have been added, and alterations and additions made to the manuscript of the third edition. The good points of the book are its completeness of mention of the pathological conditions found in the field of rhinolaryngology, and the clearness of discription of these conditions. For this reason it may well be considered a valuable work of reference. To a certain extent, however, this latter characteristic forms a basis for criticism. The etiological classifications of rhinitis and pharyngitis are extended and redundant. Many obsolete methods of operative procedure are described in detail, and the tonsillotome and to a less extent the galvanocautery, relics of the dark ages in rhinolaryngology, are still accorded their old time place. As a book for reference this addition is valuable, but to a beginner unable to differentiate between modern and obsolete in treatment, it is to be recommended with caution.

International Clinics. Vol. I Eighteenth Series, 1908. 309 pp.; cloth, $2.00. Philadelphia, J. B. Lippincott Co., 1908.

This number contains 19 original articles, for the most part of much merit, on treatment, medicine, surgery, gynecology, neurology and pathology.

Three articles giving the progress of medicine during 1907 form the second half of the volume. These articles include the new things in treatment, compiled by Stevens; in medicine, compiled by Edsall; in surgery, compiled by Bloodgood.

On the whole, this volume is one of the best of the International Clinics.

Progressive Medicine. Edited by H. A. Hare, M. D., and H. R. M. Landis. 1908, Vol. 2. 352 pp. Paper, $6 per annum. Philadelphia, Lea & Febiger, 1908.

The June issue of this quarterly is at hand and is uniform with its predecessors. This issue is in five parts, each containing reviews of the latest literature on a particular field. Hernia is discussed by Coley; surgery of the abdomen by Foote; gynecology by Clarke; diseases of the blood, spleen, thyroid gland and lymphatic system by Stengel, and ophthalmology by Jackson.

The comments of the contributors, all men of authority add much to the value of the reviews.

MEETING OF THE AMERICAN MEDICAL ASSOCIATION.

The fifty-ninth annual session of the American Medical Association was held in Chicago, June 2 to 5. For the first time since the St. Paul meeting in 1901 the association met in the center of the country. To this fact, as well as to the greatly increased membership in the last few years is due the large attendance. The registration office opened at 8:30 on Monday morning, and it was apparent almost from the start that all previous records of attendance would be broken. In the four days of the session 6,447 members were registered. Including those Chicago members who did not register, there were at least 500 in attendance whose names did not appear on the registration list. The actual attendance would not fall far short of 7,000. Adding at least 10,000 guests, exhibitors, etc., makes the actual number of persons in attendance about 17,000. The weather was of that wellnigh perfect brand that Chicago can exhibit at times, being bright and clear, yet pleasantly cool and bracing. The general headquarters and registration offices were located in the First Regiment Armory at Sixteenth and Michigan avenue, where were also found the sections on Stomatology and Pathology and Physiology, as well as the House of Delegates, commercial exhibit, scientific exhibit, etc. This building, one of the finest national guard armories in the country, served admirably for convention purposes. The meeting places for the other ten sections were the First and Second Presbyterian Churches, Sinai Temple, the Calumet Club and Grace Church Parish House, all within a few blocks of the general headquarters and the Orchestra Hall in the down town district, in which the Section on Surgery and Anatomy met. This hall, one of the handsomest auditoriums in the city, seats 2,500, and was sup-

posed to be ample for the meetings of this section, yet it was on several occasions inadequate, being crowded to the doors.

The House of Delegates was called to order on Monday morning at 10:00. by the president, Dr. Joseph D. Bryant, of New York, who in his presidential address, commended the work of the Council on Pharmacy and Chemistry as well as that done by Dr. McCormack in educating the public. He also recommended that a standing committee be established to elaborate the ethical principles underlying the practice of medicine and that general instruction in ethical medicine be made a part of the undergraduate course. He dwelt particularly on the efforts now being made to restrict experimentation and recommended action by the House of Delegates on this subject. Dr. Bryant also called attention to the invitation extended by President Roosevelt to him as president of the American Medical Association, to take part in the Conference recently held at Washington on the Conservation of Natural Resources.

The report of the General Secretary showed that the membership of the association on May 1, 1908, was 31,343, a net gain for the past year of 3,828. The reports received from state associations regarding the organization of branch associations showed that two states had voted in favor of their establishment, seven had voted against and the remainder had at the time of the publication of the report taken no action. The appointment of a committee to consider uniform provisions for the regulation of county, state and American Medical Association membership was recommended. A communication was presented from the secretary of the American Association for the Advancement of Science asking that the American Medical Association appoint representatives to the Council of that body.

The report of the Board of Trustees included the customary report from the auditing company, showing that the entire business for the fiscal year of 1907 was $385,030.89; that the total expenditures of the year had amounted to $356,222.21, leaving a net revenue for the year of $28,808.68. Detailed statements of all the various accounts of the association's business were given showing the items in each case. The report showed that during 1907, 2,715,293 copies of The Journal had been issued, forming a weekly average of 52,217, an increase of 12½% over 1906.

The Committee on Medical Legislation reported that the Army Medical Reorganization Bill and the Carroll-Lazear Pension Bills had become laws during the last session of Congress. The importance of uniform and adequate state legislation on the practice of medicine and the preservation of public health was emphasized as well as the necessity of careful study of the problems involved. The committee recommended that pending the completion of the work now being done only those changes in existing laws which are imperatively needed should be attempted by state associations. The formulation of the Vital Statistics Bill endorsed by the United States Census Department, the American Public Health Association, the Conference on Uniform State Laws of the American Bar Association and the American Statistical Association, was reported and the endorsement of the House of Delegates was asked for this measure. The report of the Chicago Conference on Medical Legislation was also given.

The Council on Medical Education reported that the work of the Council during the past year had been along the following lines:

1. The inspection and classification of medical colleges as (a) acceptable, (b) doubtful and (c) unsatisfactory.

2. The conducting of an annual conference with representatives of state examining boards and leading educators for the discussion of the important problems of medical education and medical licensure.

2. The collection and compilation of data regarding medical college students and graduates and (b) regarding results of state license examinations.

4. A thorough investigation of preliminary and medical education in Europe.

5. Working for the advancement of the requirement of preliminary education in the United States to include a year's work in physics, chemistry, biology and modern languages.

6. Obtaining accurate information regarding high schools and universities in their relation to medical education.

The Board of Public Instruction reported that it had secured a secretary, Dr. R. Max Goepp, of Philadelphia, and that it was considering the establishment of lecture systems and of state boards of public instruction and intended to publish articles in the magazines and public press for the enlightenment of the public on disease.

The Committee on Ophthalmia Neonatorum advised the enactment of laws in each state re-

garding the registration of births and placing the control of midwives in the hands of the boards of health; that health boards distribute circulars to midwives and mothers on the dangers and prophylaxis of this disease; that state and local boards of health prepare and distribute proper prophylactic solutions with specific directions for their use; that proper records be maintained in all hospitals in which children are born; that periodic reports be made by all physicians to boards of health; that concerted effort be made along the lines of public education throughout the country. This report was approved by the chairmen of the Sections on Ophthalmology, Obstetrics and Diseases of Women and Hygiene and Sanitary Science.

The Committee on Scientific Research recommended the appropriation of $200 for the assistance of each of the following:

Drs. D. J. McCarthy and M. E. Myers, Philadelphia, "An Experimental Study of Cerebral Thrombosis."

Dr. Karl Voegtlin, Baltimore, "Chemistry of the Parathyroid Glands."

Dr. Isabel Herb, Chicago, "A Study of the Etiology of Mumps."

Drs. R. M. Pearce, Albany, N. Y.; H. C. Jackson and A. W. Elting, "A Study of the Elimination of Inorganic Salts in a Case of Chronic Universal Edema of Unknown Etiology With Apparent Recovery."

Dr. H. T. Ricketts, Chicago, "An Investigation of the Identity of the Rocky Mountain Fever of Idaho with that Found in Western Montana."

On Tuesday afternoon, at the third meeting of the House, the reports of the Reference Committees were taken up, the Reference Committee on Medical Education approving the work of the Council on Medical Education and recommending that it be continued. The Reference Committee on Reports of Officers recommended the appointment of a committee of five to consider the elaboration of the Principles of Ethics. Resolutions condemning the legislative efforts to restrict animal experimentation were presented. The action of the Board of Trustees in preparing the second edition of the Directory was approved. The Reference Committee on Legislation and Political Action recommended the approval of the model law for vital statistics, which recommendation was adopted. The resolution presented by Dr. A. T. McCormack, of Kentucky, requesting all state associations publishing or controlling medical journals to restrict advertisements to such preparations as were approved by the Council on Pharmacy and Chemistry was adopted. A committee of three to confer with a like committee from the American Pharmaceutical Association in regard to drug reforms was authorized. The candidacy of Dr. C. A. L. Reed, of Cincinnati, for the United States senate was endorsed.

On Thursday afternoon the annual election took place with the following results:

President—Dr. William C. Gorgas, Ancon, Panama.

First Vice-President—Dr. Thomas Jefferson Murray, Butte, Mont.

Second Vice-President—Dr. John A. Hatchett, El Reno, Okla.

Third Vice-President—Dr. Thomas A. Woodruff, Chicago, Ill.

Fourth Vice-President—Dr. E. N. Hall, Woodburn, Ky.

General Secretary—Dr. George H. Simmons, Chicago, Ill., re-elected.

Treasurer—Dr. Frank Billings, Chicago, Ill., re-elected.

Trustees to serve until 1911—Dr. Wisner R. Townsend, New York; Dr. Philip Mills Jones, San Francisco; Dr. William T. Sarles, Sparta, Wis.

The following nominations were made by the President and confirmed by the House of Delegates:

Committee on Medical Legislation: Dr. Charles Harrington, Boston, Mass., to serve until 1911.

Council on Medical Education: Dr. Victor C. Vaughan, Ann Arbor, Mich., to serve until 1913.

Committee on Transportation and Place of Session: Dr. M. L. Harris, Chicago, chairman for three years.

The following were elected honorary members:
Dr. Edward F. Schaefer, Edinburgh, Scotland.
Dr. August Martin, Griefswald, Germany.
Dr. E. Treacher Collins, London, England.

The Committee on Awards reported the following awards in accordance with the report of the Committee on Scientific Exhibit:

Dr. H. T. Ricketts: Gold medal for research exhibit on tick fever.

Dr. Fenton B. Turck: Diploma for exhibit illustrating pathology of peptic ulcer.

Northwestern University Medical Department:

Diploma for teaching exhibit, illustrating morbid anatomy.

Rush Medical College: Diploma for teaching exhibit, illustrating morbid anatomy.

Dr. Charles H. Beard: Diploma for exhibit of drawings of the human eyeground.

Dr. Maximilian Herzog: Diploma for exhibit, illustrating early human embryology.

St. Mary's Hospital, Rochester, Minn.: Diploma for clinical and pathologic exhibit of stereoscopic photograph.

Dr. Edmond Souchon: Diploma for improved method for the preservation and exhibition of anatomic specimens.

Dr. A. M. Stober, Cook County Hospital: Diploma for exhibit, illustrating blastomycosis.

Dr. Mallory and Dr. Wolbach (Harvard): Diploma for exhibit of drawings and photomicrographs, illustrating the classification of tumors.

U. S. Public Health and Marine-Hospital Service: Honorable mention for exhibit, illustrating the investigations of Dr. C. W. Stiles on bookworm.

The Committee on Transportation and Place of Session recommended Atlantic City as the next meeting place, which choice was agreed to by the House of Delegates. The Reference Committee on Legislation and Political Action reported, requesing the Committee on Medical Legislation to arrange for a conference with the Committee of One Hundred, the Surgeons-General of the Army, Navy and Public Health and Marine-Hospital Services with a view to securing co-operation on the establishment of a National Department of Health. After the transaction of some routine business the house adjourned.

One hundred and thirty-four members of the House were present out of a total membership of one hundred and forty-two. The meetings of the House were better attended than at any time since its organization. The business was dispatched with accuracy and rapidity, the most notable tendency being the reference of resolutions, communications, etc., to the appropriate reference committees without discussion, reserving the consideration of the questions involved until the reference committee had considered the matter and submitted a report.

The social events of the week were particularly attractive. On Monday night the secretaries of the state associations and the editors of the state journals met at dinner and completed the organization of a state secretaries and editors' association. A dinner to foreign guests as well as a number of other social events also occurred on Monday evening. On Tuesday evening twenty-seven alumni dinners were held in the various hotels and restaurants throughout the city, one of the largest being that of the University of Michigan., at which over 350 alumni were present. On Wednesday evening the president's reception and ball was held at the Coliseum, thousands of members and guests being present. On Thursday evening the local profession tendered the members of the association a smoker at the Coliseum at which the attendance amounted to about 8,000. Numerous social attractions were provided during the day for the ladies and guests including receptions at the South Shore Country Club, Chicago Women's Club, etc. The sections were all largely attended and the programs were of a high order. The session was in every way the most noteworthy of any of which has yet been held and it is anticipated that some years will elapse before the record established will be surpassed.

County Society News

Midland.

At the last meeting of the Midland County Medical Society, the following officers were elected: President, C. V. High, of Coleman; secretary-treasurer, G. Sjolander, of Midland; delegate to the Manistee meeting, F. A. Towsley.

It was decided to arrange programs for each meeting from now on and each member will be requested to take part. Doctor High will give a paper at our next meeting "On the Importance of the Microscope in the Examination of the Urine." G. SJOLANDER, *Sec'y.*

WANTED—A FAMILY DOCTOR.*

FRANK BURR TIBBALS, M.D.
Detroit.

Going along one of the older streets on the

*In response to a toast at the dinner of the First Councilor District.

east side of Detroit recently, to make one of my fifty-cent calls, I saw a new sign reading, "Dr. Daniel Maloney—Medical Broker." This was a new one to me, and I went in to investigate, and succeeded without great difficulty in getting his story, which I give to you as follows:

"I wuz borrn iv poor, but Irish parents in Shantytown, New Yorrk, with goats an' tin cans for me childhood's toys. Me father wuz a Tammerny polisman in th' Tenderloine deestrict, and by some econermy aided by th' protect'f tariff existin' befure Teddy Rooservilt wuz polis commishuner,—wuz able to give his little Danny th' foinest edjicashun th' peoples money wud buy. Holy Cross, P. & S., an' Belleevue Hospitle completed me preliminary edjicashun, an' I thin cros't th' briny in sarch iv more wurrulds for me bright intelleck to conker.

Afther takin' a few F. R. C. S.'s in Dublin an' Edinburrh an' some more in Londun, I took me little flier in Paris an' Vienna as so many iv th' Amerikans do,—an' with a thrunk full iv degrees an' diplomies came home to begin wurrk, havin' spint elevin years altogither in speshul preparashun for me chosen professhun. Me degrees supposed to illusthrate me tho'ro trainin' almost phlastered th' walls iv me office, which wuz sumpshusly fitted up with th' proceeds iv me Dad's il'literit toile.

I jined Tammerny Hall an' th' Midical S'cieties, but neglected to become aither a Profissor or a Speshulist. Afther fiftin' years iv a large practis' among all classes iv S'ciety I wuz still not makin' enuf money to support me fam'ly. Me poorer pashunts all sthood me off an' wint to th' dispinserry, me wealthier pashunts all thanked me for me kindness in recommindin' a speshulist, which I did at th' rate iv about a dozin a day.

Afther touchin' me ould father for rint-money year afther year, he at las' sez to me, 'Danny,' sez he, 'whin I acted as go-bechune for th' under wurruld with th' powers above, I got me little percint on ivery deal.' ''Taint't ithical for doctors,' sez I.' 'To h'll with ithics,' sez he. Thinkin' this over as th' months wint by, I at las' begin to wunder if me sharp ould father was'nt right. Here for fiftin years I had been runnin' a midical intill'gince office, an' collectin' no fees, an' only occashunl- those borborygmic eructashuns known as thanks. So I resigned me Midical S'cieties to save thim th' thrubble iv puttin' me out, an' hung up th' sign you see, ' Dr. Daniel Maloney—Midical Broker,' with a write up an' card in th' papers sufficint to inform th' public iv me novel biznis'.

I wuz bissy fr'm th' vary firrst day. I charged th' dear people (many iv thim me ould non-payin' pashunts) tin dollars for a thu're di'gonstic examinashun, with infurmashun as to which group iv speshulists an' which speshulist iv th' many groups they naded to consult.

Me great thrubble at firrst wuz to find gineral practishuners to care for th' bulk iv the pashunts who naded a speshulist no more thin th' divil nades holy water. Most doctors ra'ly are gineral practishuners, all right, all right, but ashamed the- are to admit it, even under oath. 'Ye're a speshulist, I belave, Doctor?' sez th' pashunt. 'O, yis indade,' sez he, 'I limit me practis to mid'cine an' sarghery, both internil an' externil, with speshul attinshun to patherlogical condishuns iv th' thorix an' abdomin, includin' obstetricks, fallin' iv th' womb, varicose veins and chilblains.' That holds thim for awhile, until their money is gone. If they can borry some they go on down th' line iv itchin' palms, but niver come back to th' poor divil iv a doctor who gave thim their furrst incintiv' to th' higher life, at anny rate not while they have a dollar left.

This hermaphroditic speshulism is a great graft for shure. A speshulist ye know by th' midical diffinishun iv th' term, is a man who limits his practis' to cert'in spicified dizeases, or to th' dizeases iv a single organ or class. Why th' divil thin should th' oculist or th' dermatol'gist do life inshurance wurrk, or th' proctol'gist do gynaecology, or th' gynaecol'gist who tags himsilf, 'For wimin only,' do appindectomies on min? Is a speshulist a speshulist, just becaze he sez he is, an' if so, thin phwat is th' line iv demarkshun bechune a speshulist an' a gineral practishuner? I take it that a true speshulist (an' there be sich, tho' it want an oil emershun an' siveral smears to find thim), is a *consultant*, who afther long experience in ginirel wurrk finds himsilf better fitted for cert'in things, an' limits his wurrk to that. He wud thin kape his hands in his own pockits, an' rayfuse as dirty munny fees offered him for cases outside his speshulty. He might aven go so far as to sind back th' pashunt to th' family doctor, whin he has rindered him phwat servis he kin. Is this a prophetic vishun, or am I only dhreamin'?

Me friend O'Brien sez that at the presint time, with iv course some excepshuns, he classifize doctors in two groups—Skin-spechulists an' Grafto-interol'gists. If th' people find a man willin' to pose as a gineral practishuner, they only call him

for colds. There is th' family Oculist, Aurist, Laryngol'gist, Gastrointerol'gist, Proctol'gist, Gynaecol'gist, Genitourinaryol'gist, Obstetrishun, Sarghon, Internist an' Childrin's Speshulist, but no family doctor exc'pt for th' servants who can't afford to pay him.

Tin or twelve iv these speshulists gather 'round th' bedside iv th' rich Mrs. Rockyford, each graspin' an' treatin' th' part belongin' to him, an' each willin' to use th' aither hand in graspin' th' part belongin' to his naybur, should a dhrunkin shofur or a flat tire make him tin minits late.

'Marie,' sez Mrs. Astervilt, 'kiss th' child goodmornin' an' good night for me, an' till him I'll see him Sunday.' She thin hastens to her oculist for two dhrops iv boracic in her lift eye, to her aurist for three dollars' wurth iv hot air in her ustakin tube, has her laryngol'gist squirt adren'lin solushun up her nose, an' takes abdominal missage fr'm her gastrointerol'gist. Th' proctol'gist pronounces her enlarged anal papilli as now only vizible with th' wan-twilfth objectiv', but caushuns her ag'inst neglectin' threatmints list th' monsthur gain th' upper hand. Afther a visit to her gynaecol'gist for a cirvicil plug an' a tampon, she entirs upon th' labors iv th' day with gladsom' heart—attinds th' Mothers' Club at three, a bridge party at foive, th' tha'eter at eight, whince she reluctintly turns homeward for her quartirly visit with her lovin' spouse.

Th' doctors are an' inconsistint lot iv cusses. They oppose pay'd advertisin', list wan man moight pay for more space thin th' ithers war willin' to, but take all th' free space they can git, an' th' man who has bought th' rayporther th' most dhrinks, an' at th' same time succissfully advertiz'd himsilf among th' doctors, devilops into th' highest pric'd speshulist. He is certainly a silf made man, an' to my way iv thinkin' take a h'll iv a lot iv responsibility off iv th' divine Creator. We condemn th' Homypath becase he practis's Homy'pathy only part iv th' time—principally whin he foinds nothin' th' matter with his pashunts—but condone th' for-rivennue-only speshulist, whose speshulity is only a side line to draw gineral bizness.

Is ther any nade for speshulism anyway? Indade there is, iv th' roight brand.

We nade men who by large expeer'ence have acquired better judgmint an' greater dixterity in handlin' difficult cases thin th' average man. A succissful sarghon, bedade, is only a good head, an' clever fingers,—but becase he happins to hav' had th' chance to use his fingers more he can handle thim better thin th' rist iv us. 'Tis mesilf that wud rather hav' an appindictomy at a hundred an hour, thin a phneumony at a dollar an' a half a day. There is less danger iv thrubble, and more munny.

In th' fiftiinth cintury they called th' sarghons, incisors *or* cutters. They are now incisors *an'* cutters. Th' incisor has a good head an' clever fingers,—th' cutter has clever fingers an' an empty think tank. Th' sarghon has a limited field, to be shure, bounded on th' north by th' pichuitary body, on th' east by his own narve, on th' wist by th' pashunt's purse, an' on th' south by an in-growin' toe-nail,—but ivery thing bechune these narrow limits is his meat, an' marvil'us indade is his wurruk. He is th' patint universil can-opiner iv th' age. Th' campaign orator sez, "In Americky there is an opinin' for ivery man." The sarghon sez, "In Americky there is an opinin' *in* ivery man."

A Jew livin' in Shy'wassy county came down to th' city wid a pain in his belly, an' iv course was promptly operated, for appindicytis. Th' operashun was a brilli'nt succiss, but whin th' Jew l'arned thru' th' loquasity iv th' nurse, that he had paiy'd two hundred to be lavied iv wind on the sthomack, he immejutely died iv shock,—an' they sint th' rist iv him home to his sorrowin' family, where th' box arriv'd in due season bearin' th' tag, "Opined by mistake."

In siveral cities, they are now inshurin' various parts iv th' body 'gainst assault an' battery by th' sarghon's knife. It wurruks loike this: Say a man an' his appindix are mutually attached to wan another, so for tin cints a week he inshures his appindix for th' benefit iv himsilf an' family. He is furrst givin th' badge iv th' order, consistin' iv a tattoo on his sthomack readin' "Hands off." Should he thin lose his appindix while dhrunk or otherwise unconshus, he draws his expinsis an' foive hundred dollars,—but should he have his appindix removed by malis-aforethou't, he is arristed for obtainin' monny undher false pretinsis. This looks loike a good thing, but is too expinsiv' for th' averige man, since to adequately protact his whole anatomy wud cost about tin cints a minit, an' make him look loike a walkin' edishun iv th' Chikago Amerikan. In th' same way a woman prizes her ovariz, mainly for sintimintal reasons, but occashunly becaus they are good for childhrin. She objects, however, to th' badge iv th' ordher, interferin' as it does with th' modern s'ciety costum, hince th'unprotacted female will doubtliss continue as th' cutters' main

source iv supply.

Will; will; will; how me tongue wags on. Whin me trolly slipp'd off I wuz tellin' ye about my wurruk in New Yorrk. My intill'gince office makes monny, an' does good, an' 'tis me hearrt's desire to establish th' same biznis in all th' large cities. By firrst creatin' th' demand fr'm th' people, it is easy to foint good doctors who are not ashamed iv not bein' speshulists. I'm makin' good speshulists too, for I niver recommend one who does not strictly limit his wurrk as a consultant to th' cases in his chosen line.

I hav' but raycintly come to your middle wist where life is wurrth livin' for all but th' doctors, an' have not yit entoirely classifi'd th' profeshun in your growin' cities,—but so far I foint in ivery 500 men, about 230 incisors an' cutters,—96 gynæcol'gists,—88 eye-ear-nose en throaters,—67 internists or inside wurrkers,—an' 19 gineral practishuners, with a few doubtful.

Should I be as succissful as me cause merits, I hope to edjucate th' people to th' fact that a well trained doctor is compitint to care for ivery mimber iv th' family, for almost ivery ailmint, with th' counsel an' assistance, if nade be, iv th' more expeerinced man, th' speshulist. Th' aminded list wud thin read, 50 speshulists in all lines, who absolutely limit their wurrk to their speshulty, an' 450 gineral practishuners or family doctors. Thin in your beauchuful cities life will be wurrth livin' for doctors, as well as for bankers, speshulists an' other cap'tilists.

Should you mention me laudable ambishion to anny iv yer fri'nds, I shall not moind bein' kicked or cuss'd, havin' a hide loike a rhinossorus. Sartin I am, that some day, if I live long enuf, I shall be Emeritus Profissor iv Ekonomics iv th' Americkan Midical Associashun with McCormick, an' yer own Doctor Connor on me executif staff.

Query: Is Maloney a reformer or a dreamer?

MEMORIAL ADDRESS TO DR. N. W. WEBBER.*

J. H. CARSTENS, M. D.,
Detroit.

Dr. N. W. Webber was a practitioner in this country for forty years. He was born February 8, 1839, at Gardiner, Maine, and moved with his parents to Chicago when quite young. He was educated at the Rock River Seminary. When the war of the rebellion broke out he joined the army as hospital steward of the 16th Illinois Cavalry Regiment. Here he gained a large experience in the treatment of diseases and injuries of war, constantly assisting the surgeon of the regiment. The senior surgeon of the regiment was killed in battle. One day when he was sitting beside the assistant surgeon on a bench in front of the hospital tent, a bomb unexpectedly came that way and exploded, killing the surgeon at his side. As no other surgeon could be secured he was appointed to succeed him and he acted as assistant surgeon to the end of the war. He then returned to Chicago and graduated from the Chicago Medical College in 1866. He was Cook County physician during the cholera epidemic the next year.

He married Lucretia Mason in 1867; had three children with her. She died in 1876. In 1880 he married Carolina Brewster and had three children with her.

When the Detroit College was organized in 1868 they looked around for some one to take the chair of anatomy. Dr. Webber, living in Chicago at the time, was recommended, appointed, and moved to this city, where he lived until his death. He was a thorough anatomist and a most excellent teacher. Dr. Coryden Ford was professor of anatomy at the Michigan University and at Long Island Medical College, and had a national reputation as the best anatomist in the country, and still I have heard students who had been instructed by him say they could learn just as much from Dr. Webber.

There was a peculiar dry humor about him, and he had a unique way of stating facts, and with most beautiful demonstration enabled him to make an usually dry subject very interesting. He held this chair until 1880, when Dr. Jenks removed to Chicago. He then took the chair of gynecology previously held by Dr. Jenks, turning over the chair of obstetrics, also held by Dr. Jenks, to the writer, who before that had occupied the chair of therapeutics and materia medica. The chair of gynecology was held by Dr. Webber for 15 years, until ill-health compelled him to resign. The new chair he filled perfectly, as that dry humor mentioned before was unusually applicable to the teachings of gynecology and enabled him to make his course most interesting.

He held many positions of trust; was secretary of some of the State fraternal orders, and grand medical examiner for some others. He was pen-

*Read before the Wayne County Medical Society, May 18, 1908.

sion examiner of this district at a time when it required a great deal of work. For twelve years he was secretary of the board. These positions helped him professionally, but required a great deal of literary work and writing, and he was thus prevented from contributing to the medical literature to any extent. He wrote a few papers of marked worth, but being before the days of the extensive employment of stenographers, he had so much to write for the pension board and various societies that he was too tired to write medical articles.

He became seriously ill and incapacitated from work for more than a year, but finally recovered and was able to accept an office as medical examiner for a life insurance company, and then ceased taking active interest in medical matters.

He was a man of marked ability, a good student, a kind and indulgent father, but above all he was a man of truth and sterling honor, a man who lived up to the highest standards of medical ethics. There was no claptrap or pretense about him nor would he allow it in others. Everything must be honest and above board and straightforward—the soul of honor. Peace be to his ashes.

MEMORIAL ADDRESS TO DR. HAL C. WYMAN.*

E. B. Smith, M. D.,
Detoit.

During his medical course at the University of Michigan,† Hal Wyman was considered more than an average student, yet not brilliant in any particular subject. There are two things for which, it seems, he was noted. First, he was a diligent student, and secondly, it was known and commented on that when Hal got into the dissecting room alone there would be a few fingers and toes missing from the subjects. He seemed to take special delight in amputating these members. In his senior year he prepared the instruments and patients for Dr. Donald Maclean. It was related of this boy student that while he with others were going to their dinner a wagon passed down the street. In it seated beside the driver was a man who had his arm bandaged and seemed to be suffering. No one noticed him until he came opposite Hal. He immediately ran across the Campus, and jumping into the rig asked what the trouble was. The driver said the man's arm had been caught in a machine and was badly hurt. Hal told them to drive to the Cook House where he would get for them the best surgeon in the United States, Dr. Donald Maclean. The man was taken to the hospital and his injury dressed. It was one of the first elbow resections that had been done at the University in a number of years. Dr. Maclean repeatedly referred to this incident and gave young Wyman credit for saving not only the man's arm but also his life.

To the north of Blissfield, where Dr. Wyman located after his graduation, was situated his old alma mater with its clinics; an hour's ride to the west was the rising town of Adrian; to the east the town of Monroe; and to the south the busy city of Toledo. Here he practiced for three years and then went abroad. He studied in London, Edinburgh, Paris, Heidelberg, Berlin and Vienna for a year, taking up medicine as well as surgery. He also made a study of the customs, language and literature of these countries. Many a German of this city will testify as to Dr. Wyman's ability to speak his language.

In 1876 he returned to Blissfield, where he established a clinic, and his sign read "Medical and Surgical Clinic of Dr. Hal C. Wyman." The building in which he was located was a two-story frame building with a basement. It was built for a general country store. On the first floor were his office and sleeping rooms. The second room was used for patients, a hospital. This building is still standing. In the cellar of this building he dissected, at first, animals, and later on secured by some means human subjects. It was about this time that Dr. Dayton Parker became associated with him in the work of dissecting, and as others came in to take part in the work, here began a desire to teach.

Before long he was doing all kinds of operative work, and particularly did he interest himself in eye work. Here in this little inland town in the 70's, we find this man extracting cataracts and doing other major operations upon the eye. So that Rochester, Minnesota, was not the first small town that has seen and felt the ingenuity of the aspiring Yankee medical will.

Like Alexander, Young Dr. Hal wanted a new field to conquer, so in 1880 he came to Detroit, and in 1881 was appointed Professor of Physiology in the Michigan College of Medicine. Here

*Read before the Wayne County Medical Society, May 18, 1908.

†The strictly biographical data of this paper are omitted, as being essentially repetitions of the facts contained in the obituary notice of Dr. Wyman in the April issue.

he began to make felt his striking personality. Some of the older members of the faculty were not entirely pleased with his lectures, saying that it was "Wyman's" physiology he was teaching. This seems to have been true. He did not always follow the text book but clothed the subject with ideas entirely his own. His lectures were intensely interesting to the students. His diction was polished and his descriptions apt. At his lectures and afterwards his clinics, there was always a full attendance. Students even after graduation would come again and again to his clinics.

He was now beginning to do more and more surgical work and see more patients in consultation. The older medical men soon knew that a man of strength and character had settled among them. The "Powers that Be" at this time decided to make one strong medical school in the city and to this end the old Detroit School amalgamated with the Michigan School. This movement gave Dr. Wyman his opportunity. So quick was he to see it and so quick to grasp it, that upon the very heels of this amalgamation he established the Michigan College of Medicine and Surgery, had himself appointed professor of surgery and then launched out. Emergency Hospital was built and equipped. Dr. Wyman then installed Detroit's first free ambulance, and this brought to his door more accidental and emergency surgery than this city had ever before seen or may ever see again brought to one place and treated by one man. He seemed to be the man of destiny. His star stood out, shone clearer and brighter than any other star of the same or greater magnitude. He work night and day. His consultations which came to him in ever increasing numbers were of all kinds, from every class of people and from every part of and beyond the confines of Michigan. The railroads carried him now on his missions of relief, as, in his early career, his horse had done.

Few men have done better work than Dr. Wyman, none have done more. Ever busy, always alert, storing his mind with a great fund of knowledge and this knowledge always of a particular kind, he was able, without being forewarned, to lay before his hearers this knowledge as semi-scientific data. His travels stored his well kept brain with a wealth of learning. The mountain fever of the Rockies he had seen and studied; the southern fever's ravages he had observed; malaria was a well read subject with him. He had seen it all up and down the Raisin River in Lenawee county and the other counties of Southern Michigan, and he took special delight in reviewing the subject wherever he found it in his travels; cholera was a subject he liked to talk upon, until latterly this disease had touched his household and nipped in the bud of her young womanhood one whom he loved so well.

His trip around the world finished him as the most traveled physician in our fair city. It was a trip of research as well as of pleasure. In India along the Ganges he studied the plague. In Palestine and Constantinople he took an interest in the eye diseases peculiar to these countries. Down the Nile he traveled. It was while there he observed and studied the sleeping sickness. His friends know how he expressed the opinion that some day the birds of the air would carry this disease from the Old World to this New Country of ours. In Japan he spent some time in studying the people, their habits and customs, and from the knowledge thus acquired he took the stand that it was unfortunate that Japan was victorious in the recent war with Russia. It was his prophecy that America would rue the day she declared in favor of the Japanese.

With a family history of a parent having died of consumption and a personal history of, while a student in Paris, having had a pulmonary hemorrhage which nearly proved fatal, this being followed by inflammation of the upper lobe of the right lung, he was thus at the beginning of his career left with practically one normal lung with which to fight out his life work. In later years rheumatism took hold of him, affecting his heart, giving him endocarditis and leaving behind the blight of a mitral regurgitation.

Dr. Wyman's hours were not all confined to the practice of medicine. He was the author of more papers than any other medical man of Michigan. As a historical writer he had few equals. Every detail of the struggle between the North and the South was clear in his mind. He had gone to the old battle fields. He knew where each opposing army had stood, knew where they had made their charges, knew at what points upon the field the battle had changed, and where victory was gained. His boyhood days were spent where the British and the Colonial armies had crossed and recrossed and where Tecumseh with all his strategy had planned to trap and exterminate the little garrison that had fortified itself for the protection of the few families living about. His many papers read before the historical societies of the city,

state and country, bear out how keen a student he was and how faithful a narrator. He was much interested interested in the life of General Hull, a man condemned almost universally by historians. Dr. Wyman gathered data to show that the General was justified in his acts; that he was the big man, the great general. Among the medical books written by Dr. Wyman are "Diesases of the Bladder and Prostate Gland," written in 1901 for the Physicians' Leisure Library published by Geo. S. Davis & Co., and "Experimental Surgery," written for the same firm.

Here let me drop a tear to Dr. Wyman's memory, the memory of a good companion, a clean acquaintance, one whose conversation was a delight, one who never was known to tell a story that could not be told in your household in the presence of your family. Some men are gentlemen only in public, Dr. Wyman was always the gentleman. A medical man who had many patients and no man was more loved by his patients than was he. Some of us may have heard the doctor's praises sung by old Mike Connor. One eye lost and a corneal opacity of the other —totally blind—this poor man was led from place to place. Dr. Wyman performed an iridectomy and Mike's night became day. He loved Dr. Wyman with all the fire and enthusiasm of his nature and his "God bless you, Doctor Wyman" has been echoed by hundreds of others. To this you and I breathe a quiet amen.

Doctor Wyman was a color builder in words. He had qualities that only those possess who are called great—those qualities that set the strong apart and make them stand out to be seen and felt by the world. His intellectuality never weakened. He fought the fight and kept the faith in his work—in his college. This rare and radiant mind piled up contributions to the science of medicine and surgery. In diagnostic skill he was a very pontiff of exactness. After all has been spoken and written of this student, scholar, gentleman and man of science, let us draw the curtain remembering his many virtues, his vigorous personality, the lack of hostility in his make up. He prognosticated his own case and then lay down to let the sands of life run out.

Correspondence.

Philadelphia, June 1, 1908.

To the Readers of the Journal:

The Wistar Institute of Anatomy and Biology appeals for co-operation in securing human embryos for scientific investigations.

No one, more than you, will appreciate the value of researches in anatomy and other fundamental sciences, for the advancement of your art. The Wistar Institute, therefore, begs you to assist in placing this material in the hands of embryologists who will make good use of it.

The collections of embryos and other specimens belonging to the Wistar Institute are always open to any competent investigator for inspection and study. Its museum serves as a depository for anatomical materials which may have served the purpose of one investigation and are to be stored for future study.

A moment's thought will convince you that in one month's time in a great city, more human embryological material than exists in any collection in the world, goes to waste.

Will you help us to save this material that American Anatomists may study it?

Place embryos, including membranes, immediately in a mixture of one part formalin and nine parts water. Never place an embryo in pure water; it damages it for histological purposes.

The Wistar Institute will send to your office, on request, a neatly boxed jar, with a quantity of formalin and full directions for preserving embryos. Operations for tubal or extra-uterine pregnancies are likely to yield the most perfect specimens.

Full credit will be given the collector in every case, and specimens will be reported upon promptly. The Institute will gladly meet any expenses incurred.

If you have a specimen for the Institute, telephone Preston 2575 (Bell 'phone), and a messenger will call for it, or you may send it by express to

THE WISTAR INSTITUTE OF ANATOMY AND BIOLOGY,
36th Street and Woodland Ave.,
Philadelphia, Pa.

News

On Tuesday, June 9, an appeal to public charity was made in Detroit, for the furtherance of the aims of the Detroit Society for the Study and Prevention of Tuberculosis. The day was called "Tuberculosis Charity Day," and was widely advertised in advance; the municipal officials, police, commercial houses, schools, factories, business men, railroads, hotels, etc., lent their hearty coöperation. The collections were arranged for by a committee of women, under the general direction of Mrs. W. A. McGraw, chairman. Subcommittees attended to the endless details of advertising, obtaining the right to ask contributions in public and private places, securing women and girls to make the collections, printing of badges, boxes, etc., the pledging of automobiles, selection of stations, appointment of chaperones, etc., etc. The headquarters were in the Hotel Pontchartrain, where all during the day the committees were busy; several physicians gave generously of their time, both in preparation for the day, and in the duties of the day itself. The total collections were over $11,800 gross, and over $10,900 net. The proceeds will be used according to the discretion of a large committee of representative women, business men, and professional men, including several physicians.

Dr. F. S. Bell of Northville has returned from a trip to Arizona.

Dr. B. H. Jenne has removed from Clio to Otisville.

Dr. Charters of Mackinaw has moved to Mackinac Island, in the same office with Dr. Bailey.

Dr. J. M. Peebles of Battle Creek is giving numerous lectures in different places on the subject of his foreign travels.

Dr. D. E. Bagshaw of Saginaw has returned from a post-graduate course in Philadelphia.

Dr. Eben D. Kanagan of Charlevoix and Dr. Joseph Heitger have been appointed assistant physicians at the State Asylum in Kalamazoo.

Dr. H. Van D. Robinson of Muskegon has returned from a trip abroad.

Dr. Mary Willard of Detroit has moved to Cleveland and will take up lecture work.

The following physicians are abroad: Dr. Charles D. Aaron, Dr. Florence Huson, Detroit; Dr. G. F. Bauch, Lansing; Dr. James Hyslop, St. Johns; Dr. F. H. Callow, Mt. Morris.

Dr. E. P. Lockart of Iron Mountain has been appointed surgeon for the Wisconsin & Michigan Railroad.

Dr. J. J. MacNett of Traverse City has returned home after a course of post-graduate work in Chicago.

The Escanaba Physicians' Club has elected the following officers: President, Dr. Michael P. Fenelon; Vice-President, Dr. Harry W. Long; Secretary, Dr. Wm. A. Lemire; Treasurer, Dr. Ferris Summerbell.

Small-pox has been reported in Atlantic, Jackson and Calumet.

Dr. J. B. Kennedy has been elected vice-president of the Detroit Board of Health.

Dr. W. P. Manton is chairman of the Section of Obstetrics and Gynecology of the A. M. A. for the ensuing year. Dr. J. H. Carstens is the Section's delegate to the House of Delegates. Dr. B. R. Schenck is one of a committee to cooperate with the general committee of the Association on Nomenclature and Classification of Diseases.

Michigan was represented at the meeting of the American Medical Association by a large number of members. The registration from our state numbered 322 and we were also well represented on the program there being 17 essayists from the state.

"Dr. James' Headache Cure" is the latest nostrum to be widely advertised in Detroit. Look out for cases of acetanilid poisoning from its use.

Drs. A. N. Collins, F. B. Tibbals and J. D. Matthews took a western trip after the Manistee meeting, spending some days at the Mayo clinic, in Rochester.

The National Volunteer Emergency Service, instituted in 1900, has recently been re-organized by the election of Dr. James Evelyn Pilcher, the distinguished editor of The Military Surgeon, as its Director General, and Dr. F. Elbert Davis, of New York, as its Adjutant General. Its work will be conducted along military lines, the details being worked out in three separate corps, a First Aid Corps, a Public Health Corps, and a Medical Corps—the latter consisting of physicians, with rank from lieutenant to colonel, according to length of service, to whom are afforded special opportunities for emergency training. It includes among its personnel a large number of notable

personages, and is rapidly extending its membership throughout the country. Full details regarding the service and its great work may be obtained by addressing Director General Pilcher at Carlisle, Pa.

Marriages

Dr. A. W. Row and Miss Elinor T. Schulte of Marine City, June 3.

George B. Lowrie, M. D., and Miss Marie Fowler Weeks, both of Detroit, at the home of the bride's sister, Mrs. Hal C. Wyman, June 17.

Deaths

Lorenzo S. Putney, M. D., once a practitioner in Ann Arbor and later in Sturgis, but for the last ten years a resident of Norfolk, N. Y., died in the latter place, of pneumonia, aged 65.

Mary Clark, M. D., a practitioner for 40 years in Battle Creek, died on May 31, after a long illness.

Samuel Kitchen, M. D., a well known practitioner of Saginaw, died suddenly on June 9, of heart failure, aged 76.

Frederick P. Anderson, M. D., of Grosse Isle, died at his home recently, aged 66.

John Powers, M. D., of Benzonia, died suddenly from cerebral hemorrhage, at his home, April 4, aged 73.

Edgar Dudley Lewis, M. D., of Otisville, died at his home, from acute gastritis, May 16, aged 60.

Mary P. Havens, M. D., died at her home in St. Johns, May 12, after an operation for gallstone disease, aged 70.

Dr. George F. Heath, a prominent member of the Monroe County and State Medical Societies, died suddenly of apoplexy at his home in Monroe, June 16th.

George Francis Heath was born in Warsaw, N. Y., on September 21, 1850. Until ten years of age he lived there, but upon his mother's death in 1860, and his father's entering the Union army in 1861, he went to live with his uncle in Poultney, Vermont. There he attended schools, public, private and commercial, and assisted in his uncle's drug store for about seven years. When nineteen years of age, he joined his father at Warrensbury, Mo. He was graduated from the high school of that city in 1871 and the same year entered advanced classes in the State Normal School. In 1872 he was appointed postmaster to fill an unexpired term, and was reappointed at its close. He gave up the position in June, 1876, and entered the drug business. In 1879 he discontinued the drug business to take up the study of medicine in the University of Michigan. He received his diploma in 1881 and in June of that year was appointed as resident physician at the University Hospital, as which he continued for three years. He resigned in June, 1884, to succeed to the practice of Dr. Charles Tracy Southworth of Monroe. He soon became a prominent figure not only in medical, but also in educational and political circles. He was one of the few Republicans who have been elected mayor of Monroe, being chosen in 1890, 1896, 1897 and 1906, besides at times holding his opponents to the scantest of margins in campaigns in which he was unsuccessful. Dr. Heath was the first president of the Monroe County Medical Society, and for the past six years has been secretary-treasurer.

NOTICE TO MEMBERS: There are still a considerable number of members who have not paid their dues to the county and state societies for 1908. To insure the success of our work, dues must be paid promptly and the limit of time has now passed. To avoid suspension and the trouble of subsequent reinstatement, county and state fees should be sent to the county secretary before August first.

County Secretaries: Please forward all names promptly. Members not in good standing will be dropped from the mailing list and their names sent to the A. M. A. as ineligible for membership in that society. This will be done September first.

Progress of Medical Science

MEDICINE.

Conducted by

T. B. COOLEY, M. D.

Eberth Bacilli in the Blood of Persons Not Sick with Typhoid.—In view of the great importance now attached to blood cultures in the diagnosis of typhoid, BUSSE's observations are peculiarly interesting. He first observed the condition in two patients suspected to be suffering from typhoid, where positive blood cultures seemed to confirm the diagnosis. One developed a roseolar eruption, but the Widal reaction did not appear at any time in either case. Both came to autopsy, and were found to have had diffused miliary tuberculosis, with intestinal ulceration. There was no indication whatever post-mortem of concomitant typhoid. The identification of the bacilli is said to have been unquestionable. There was nothing in the history of either case to indicate that the patient might recently have passed through an attack of typhoid. The findings in these two cases led BUSSE to look for the same condition in other patients not suspected to have typhoid. Two more cases were found—one that of a woman with acutely progressing tuberculosis, with intestinal involvement, in which the diagnosis was confirmed at autopsy, and the other that of a man with croupous pneumonia, who had a diarrhea early in the disease. It is not impossible that this last patient might recently have had typhoid. BUSSE thinks the most probable explanation of these cases to be that the patients were "typhoid carriers," and that the diarrhea or intestinal ulceration made possible the passage of the bacilli through the intestinal wall and into the blood stream. He cites one other recorded case, and suggests that many more might be found by looking for them.—*Muench. Med. Wochenschr.*, May 26, 1908.

The Use of Serum in Scarlet Fever.—CUMPSTON reports his observations on a series of cases of severe scarlet fever treated with a polyvalent serum prepared by Burroughs and Wellcome by immunizing horses to a mixture of strains of streptococci cultivated from the throats of scarlet fever patients. He divides these severe cases clinically into "toxic" and "septic"—the "toxic" being those which present the ordinary symptoms of scarlet fever in an exceptionally high degree, and the "septic" those which show the well-known results of streptococcus invasion—cellulitis, ulcerative pharyngitis, etc. The toxic cases were not distinctly improved by the use of the serum. In the septic cases, on the other hand, the percentage of recoveries was better than usual in a series of such severity, and CUMPSTON thought he could see also, in the cases that did recover, a marked improvement in symptoms following the injections. Delirium was lessened, temperature lowered, facial swelling was diminished, the muco-purulent pharyngeal and nasal discharge decreased or stopped, and gland suppuration seemed at times to be prevented—results very similar to those described as following Moser's serum.

The average dose of the serum was 50 c. c., given usually subcutaneously, though in four cases where the injections were made into a vein the results seemed more rapid and satisfactory. One patient had an unpleasant reaction with rigor and high fever. Three developed abscesses at the site of inoculation. As with anti-diphtheric serum, results were better the earlier the serum was used.—*Brit. Med. Jour.*, May 30, 1908.

Posture in Treatment of Pulmonary Tuberculosis.—WISE describes a method used by himself in a number of cases, with the idea of facilitating drainage from the lungs, and bringing about passive hyperemia of the apices. He has a sort of couch made, on which the patients lie face down for a certain time each day, the body forming a double inclined plane with both head and feet lower than the hips. This is said to be more comfortable than the ordinary practice of raising the foot of the couch or bed, and to be in fact, distinctly pleasant. Results are said to be distinctly good in the way of facilitating the emptying of cavities, relieving cough, and at times influencing favorably temperature, and with it appetite and nutrition.—*Lancet*, May 30, 1908.

Calcium Chloride in Melena Neonatorum.—LEGGE reports a severe case of melena neonatorum, in which in the course of 36 hours he gave 20 grains of calcium chloride. The child recovered, and LEGGE attributes the result to the treatment, as the prognosis at the outset was distinctly bad.—*Brit. Med. Jour.*, May 16, 1908.

SURGERY

Conducted by

MAX BALLIN, M. D.

The Value of Enterostomy and Conservative Operative Methods in the Surgical Treatment of Acute Obstruction.—The operative indications in acute obstruction of the bowels are twofold, the relief of the obstruction, and the withdrawal of the retained and poisonous intestinal contents. In many patients the operation for obstruction is well borne, but death occurs after a few hours, from rapid resorption of the toxic substances. Many operators therefore empty the distended gut by aspiration or incision. The author thinks it advisable in patients whose strength is at all diminished, to simply open the bowel above the obstruction and drain—enterostomy—and to leave the final removal of the obstruction for a secondary operation. Enterostomy and drainage should be the operation of choice, not only in desperate cases, but also in many patients whose condition is still a fair one. Prolonged search for the obstruction and its relief should in all patients except in those in very good condition be delayed until the acute symptoms have been relieved by the opening and drainage of the bowel. When gangrenous intestine is present, it is better to bring it outside of the abdomen and deal with it later; the obstructive symptoms being meanwhile relieved by enterostomy. The enterostomy alone may in some cases relieve permanently intestinal obstruction. Fecal fistulas will remain in only a small proportion of the cases, in which enterostomy has been done. The enterostomy should be done according to the principle of Kader's Gastrostomy (small incision and sewing in of rubber tube in intestinal wall). —Chas. Elsberg, *Annals of Surgery,* May, 1908.

Hemorrhages from the Stomach and Duodenum.—Many surgeons believe that in hemorrhage from the stomach gastrojejunostomy is efficient as a curative agent without direct attack upon the bleeding vessel. Mayo agrees with this opinion only as regards small and moderate hemorrhages. In cases of severe bleeding from prepyloric and duodenal ulcers, gastrojejunostomy may prove inefficient (3 cases of severe hemorrhage continuing after gastroenterestomy are reported). In connection with the gastrojejunostomy, if an ulcer exists in the stomach it should be exised if possible. When this is not feasible the main blood vessels leading into it should be ligated and the peritoneum and muscular coats drawn over it. Excision however is the best procedure as it gets rid of the disease and prevents a possible secondary cancerous degeneration. Bleeding ulcers which lie a considerable distance above the pylorus should be excised. In extensive ulcers, such as the hour-glass variety, this may amount to resection in continuity. In doing this resection much deformity may result from the plastic closure of the gap produced by removal of the ulcer and should the deformity interfere materially with drainage through the pylorus, gastrojejunostomy in addition may be required. In hemorrhage from duodenal ulcer ligation of the blood vessels and closure of the outer coats over the indurated area with gastrojejunostomy will be found efficient. For severe hemorrhages from the stomach in those cases in which no ulcer can be located from the exterior, the anterior wall of the stomach is opened by a longitudinal incision and by counter pressure successive areas of the mucous membrane are presented at the opening until the bleeding point is detected. With chromic catgut on a small curved needle the hemorrhage area is sutured from the mucous side. Over this on the peritoneal side a few line sutures are introduced for protection, after which the working incision of the stomach is sutured in the usual manner.—Will J. Mayo, *Surgery, Gynecology and Obstetrics,* May 1908.

Treatment of Gonorrhoic Arthritis with Bier's Hyperemia.—The treatment of gonorrhoic arthritis by means of hyperemia means a great progress. The author leaves the bandage for congestion for 20-22 hours during a day and continues this treatment for 1-3 weeks as needed. Proper care of skin, changing the place where the bandage is applied, putting cotton under the constricting rubber bandage and powdering of the skin will prevent blistering. The results of this treatment are: relief of pain and milder course of arthritis. Movements of the affected joints can be practised early and therewith functional results will be better. In fact in the 40 cases the author reports as treated after this Bier's method, not a single one terminated in ankylosis.—Baetzner, *Deutsche Zeitschrift fuer Chirurgie,* Vol. 93, Part 1.

GYNECOLOGY AND OBSTETRICS.

Conducted by

B. R. SCHENCK, M. D.

Localization and Clinical Symptoms of Intracranial Hemorrhage in the Newborn.—SEITZ's material consisted of 23 cases. At autopsy the development of artefacts was avoided by making gross frozen sections of the head. The hemorrhage was regularly venous in origin and practically always between dura and pia. In subtentorial bleeding the quantity of blood was always small—tea to tablespoonful. The symptoms are quite characteristic, the children not being born asphyctic, remain normal for a few hours, are always quiet and then slowly show signs of bulbar compression—irregular, shallow, choppy respiration, and bluish yellow tint. They resemble cases of atalectesis. Death occurs in 24-48 hours.

In supratentorial bleeding, which usually is unilateral, no abnormal signs are noted on the first day, but on the second a characteristic restlessness and continuous crying develop. Later compression symptoms, chiefly respiratory, coma, etc., appear. Local signs due to motor irritation and later paresis are seen, referable chiefly to the facial, leg and arm centers. The fontanelles bulge, and as the congestion increases the general brain symptoms overshadow the local ones and serve to unsettle the localizing of the lesion. Death most commonly occurs on the fourth to eighth day. Although the skull of the newborn permits of a certain amount of increase of the intracranial contents, it becomes as inexpansible as that of the adult when this limit has been reached; therefore progressive signs of pressure indicate operation. Seitz operated upon one case, relieving a supratentorial hemorrhage, but the child succumbed to a not diagnosed intratentorial hematoma.

Of the 23 cases, 5 recovered, and of these all had supratentorial hemorrhage; 3 recovered completely. Therapeutically, avoidance of all external stimuli (place in the incubator), small doses of bromide (¾ grains), cold applications to the head and feeding by gavage are indicated. If the symptoms are purely local non-interference should be practiced; if progressive and general, an exploratory craniotomy is proper. Subtentorial hemorrhage is not amenable to surgical interference and lumbar puncture affords but transitory relief. Of the 23 cases, 6 were spontaneous and easy labors, so that the forceps should not always be blamed. This mode of death is of forensic importance, as apparently healthy children may die suddenly and mysteriously. Seitz mentions Cushing's results of 4 operations with 2 recoveries.—*American Journal of Surgery*, May, 1907.

Primary Carcinoma of the Female Urethra.—At the meeting of the American Surgical Association, McMurtry reported two cases of this comparatively rare condition and reviewed the 27 cases in the literature.

In both the disease originated in the urethra. Both patients were treated by complete excision of the urethra down to the sphincter muscle of the bladder. In one case there was recurrence during the first year, rapidly extending to the base of the bladder, the perivesical tissues and inguinal glands. Further operation was not permitted. In the second case, the pathologic process was in its incipiency; the urethra was excised as indicated; prompt healing followed with perfect control of the bladder and there has been no recurrence one year after operation. Dr. McMurtry claims that early diagnosis of the condition is difficult because of the resemblance of the initial lesion to urethral caruncle. He also directed attention to the difficulty of differential diagnosis from syphilitic lesions in the same location. The prognosis and treatment are the same as for carcinoma in other parts of the body. The great desideratum for successful treatment is routine examination of all patients applying to the physician with painful micturition, early diagnosis of malignant types of disease, with complete excision in that early stage of invasion when permanent cure is possible.—*J. A. M. A.*, June 20, 1908.

PATHOLOGY AND BACTERIOLOGY.

Conducted by

C. S. OAKMAN, M. D.

Blood Cultures in Typhoid Fever and Comments Upon the Hospital Treatment.—Recent observations have proven that typhoid patients may be infective in the prodromal stages, inasmuch as the bacilli have been recovered from the stools and the blood before the real illness developed. The Widal test does not usually appear until the second week, but in 90% of cases of typhoid the blood will show the bacilli in the first week, though the percentage decreases later. The wide adoption of blood culture methods has been prevented by their difficult technic, but recent simplification has rendered them more practicable. JOSLIN and OVERLANDER in Boston made blood cultures in 45 cases of fever, using the following technic: Normal ox-gall was collected in a sterile flask immediately after the creature's death, and transferred to test tubes in quantities of 5 c. c. each. These were sterilized at 100° C on three successive days, under a pressure of 10 to 18 lbs. The patient's arm, over the median cephalic vein, was scrubbed with soap and water, and alcohol, then poulticed with bichloride 30 minutes. Five to ten c. c. of blood were removed in each instance, of which 2½ c. c. were placed in each of two tubes of bile medium. The rest was saved for histological study and Widal reactions. The inoculated tubes were incubated ten hours and then four loops from each tube were transplanted to two plain bouillon tubes, and examined in twelve hours, and, if negative, at later periods up to 72 hours. Motility was not regarded as a safe guide to identification, but the bacilli were tested with a typhoid serum of known agglutinating power. The organisms were always found in pure culture.

Of the 45 cases, 15 proved not to have typhoid, judged by the usual criteria as well as blood culture. Of 30 cases of typhoid, 21 cultures were positive. It is known now that severe cases are more likely to give positive cultures than mild ones, the severity being determined by the general condition of the patient. The cultures were taken in severe cases on an average by the eleventh day, moderate ones on the twelfth, and mild ones by the sixteenth, hence it is probable that several mild ones may have been missed, because of the failure to take cultures earlier in the disease.

The authors conclude that typhoid can generally be diagnosticated in the first week by the use of blood cultures, but in only 60% in the second week; that the test is valuable in detecting relapses; that it is useful in prophylaxis, by enabling the proper precautions to be taken at an early stage of the disease.—*Boston Medical and Surgical Journal*, May 7, '08.

The Origin of Urinary Casts; an Experimental Study.—R. M. SMITH reports experiments upon rabbits in the effort to throw light upon the manner of formation of casts. Different irritant agents, which are known to cause nephritis, were successively used, viz., uranium nitrate, potassium bichromate, arsenic, cantharidin and trypan red. The uranium nitrate gave the most typical and constant results. It was first ascertained that the animals had no albumen or casts in the urine, and then the urine was collected constantly, and analyzed daily, with special reference to albumen and casts.

It was noted that the first casts to appear were always of the fine granular variety, and the hyaline casts appeared later. There was a tendency for the vasts to come in showers—many one day and none the next.

Those urines containing many casts usually showed a correspondingly large amount of albumen, but when the kidney lesion was chiefly glomerular, the casts were few in proportion to the quantity of albumen. Sectional studies of the kidneys were made from freshly killed animals after varying dosages of the irritant.

Histologically, the first change to appear was a swelling of the cells of the distal convoluted tubules, with an obscuring of their boundaries and of the tubular lumen. The straight tubules were similarly, though much less, affected. A continuation of this process resulted in a marked degeneration of the cells with the formation of a granular necrotic mass, which is gradually forced along the tubule by the pressure of urine, losing its granular character until it is finally homogenous and hyaline.—*Boston Medical and Surgical Journal*, May 7, '08.

GENITO-URINARY SURGERY.

Conducted by

W. A. SPITZLEY, M. D.

Results of Operation on the Kidney for Calculus and Tuberculosis.—McCOSH reports having performed fifty-four nephrectomies, nineteen of these for tuberculosis. There were no fatalities due to shock. Two patients died within a few weeks after operation. Eight patients died at periods of from one to three years after operation. Five patients have made a perfect recovery, and now enjoy excellent health at periods varying from six to nineteen years after operation. In three hundred and thirty cases of nephrectomy which he had collected there were about 20 per cent of permanent cures.

He had performed forty-five operations for renal calculi. In this paper the septic kidneys, or those in a condition of pyonephrosis were excluded from consideration. Fifteen nephrolithotomies had been performed by him. Twelve of these patients were perfectly well at the present time. It was a question with him whether the stone should be extracted through an incision in the parenchyma of the kidney or through one made in the renal pelvis. He had never been inconvenienced by excessive hemorrhage and he was inclined to prefer the extraction of the stone through the kidney, rather than by an incision in its pelvis.

While these cases are not sufficiently numerous to throw much light on this question, yet it is suggestive that in five patients where the incision was made in the pelvis, leakage occurred in four. In six cases where incision was made through the kidney itself, leakage occurred in one only. It is not quite fair, however, to judge from these figures that leakage of urine is less apt to follow incisions in the kidney than those in the pelvis, because in several patients the wound in the pelvis was but lightly sutured in anticipation of future need of external drainage, whereas the wound in the kidney was always thoroughly closed by suture. It is his impression, however, that there is less danger of leakage when the stone is extracted through the parenchyma of the kidney.

In the majority of patients with renal calculi either the pyelitis is so severe or the kidney itself is in such a state of advanced pyonephrosis that all question of closure of the kidney is at once settled. External drainage is necessary. There are, on the other hand, patients in whom the kidney itself appears comparatively normal and where the pyelitis is comparatively slight. Drainage seems, under such conditions, to be quite unnecessary. We will always, however, encounter a few cases where it will not be easy to decide whether or not to employ drainage. In all cases we must be sure that the ureter is patent. Drainage is indicated if there be any sign of disorganization of the kidney itself, if the calyces be much distended, if the urine should have been loaded with pus prior to the operation, if there should have been at any time fever or signs of sepsis, if much damage has been done to the kidney during the extraction of the calculus, and if there should have been crumbling of the calculus during the process of its extraction—as under these circumstances some small fragments might have been left behind in the calyces. Should there be doubt as to the wisest method of procedure, a compromise may be made and the kidney lightly sutured with fine (00) catgut. Should the inflammation of the pelvis be so severe as to demand drainage, nature will come to its relief and burst open the sutured kidney, as occurred in one case.—*Annals of Surgery,* June, '08.

Nephrolithiasis.—BARROW report a case of kidney stone successfully removed at operation, weighing one pound and two drachms. The patient was a man of 48, who had had symptoms from the age of eight, and had on this account never been in good health more than a few months at a time. At the age of 14 he had chills and fever for a year, not affected by quinine. At the age of 20 urinary symptoms first appeared, with painful micturition and turbidity. After 30 the attacks of pain became more frequent, and for ten years before operation he had been practically an invalid. At operation a nephrectomy was done, as the kidney was much degenerated. The man was cured and has been in good health and able to work for two years.—*Annals of Surgery,* June, '08.

NEUROLOGY.

Conducted by

C. W. HITCHCOCK, M. D.

The Diagnosis and Treatment of Syphilitic Lesions of the Nervous System.—The importance is urged of as early diagnosis of these lesions as is possible since the greatest benefits are promised only by early therapeutic measures. Happily, in but a few of those infected do lesions of the nervous system follow. Certain infections and perhaps certain families seem to present unusually numerous instances of nerve lesions, due probably to a virulent infection and weakened resistance of nervous structures.

These tissues may be attacked almost immediately or only after many years. Pathologically, there is always a round-celled infiltration about the blood-vessels and in the pia—a secondary endarteritis and permanent thickening of the meninges. Rarely small gummata are found, but these less commonly than is supposed. More rarely still the substance of brain or cord is involved. If many years after the infection, there is usually sclerosis of vessels, thickening of meninges, sometimes gummata, but it is principally to the results of endarteritis that symptoms are due. There are, however, other gradual changes in nervous structures thought to be the results of toxins.

Among the earliest symptoms is a sudden myelitis, usually of lower thoracic or thoracic-lumbar region with loss of power in both limbs, loss of bladder and rectal functions, and sensation. Girdle sense and pain may also be present. Even in the midst of treatment, diffuse symptoms, the result of multiple lesions of brain cord, may appear, with irregular motor and sensory involvement in addition to meningeal symptoms. Hemiplegia from early endarteritis is also a common and early symptom. Meningitis of the base is most severe about the chiasm and hence the common involvement of the optic, oculo-motor, and sixth nerves. Disturbance of the reaction and regularity of the pupil is one of the most common and constant features. Oculo-motor palsy unilateral in type occurs most frequently and has been called the sign-manual of cerebral syphilis.

Owing to the meningeal involvement of the cord being greatest in its posterior portion, girdle sense and pain are common symptoms. After the fifth year either brain or cord symptoms are apt to predominate. It is in the period of round-celled infiltration that treatment avails much and this should be vigorously mercurial. More is to be hoped from mercury than from iodides.—T. H. WEISENBURG in *Amer. Jour. Med. Sci.* for April, 1908.

Subacute Combined Cord Degeneration.—Since 1887, these cases have been reported under various names. Their principal symptoms are: (a) sensory, due to posterior tract degeneration, and (b) motor weakness and spasticity due to pyramidal tract degeneration and later flaccid paralysis, owing to anterior horn degeneration. One of its earliest manifestations is impairment of subjective sensation in the lower extremities. Tingling, numbness, or prickling in feet or calces is complained of, as also often a dull ache in lower spine. A paresthesia confined at first to the lower extremities may sooner or later involve hands and fingers. Girdle sensation and neuralgiaform attacks sometimes appear. The superficial reflexes and the light reflexes show no characteristic changes. The tendon reflexes are usually exaggerated and ankle clonus, Babinski reflex, and Gordon's paradoxic reflex are common. The lower extremities become gradually spastic, the patient finally has to take to his bed and a complete paraplegia is developed. Varying degrees of anesthesia, analgesia, and thermo-anesthesia and loss of muscle and joint sense ensue. Sphincter disturbances are usually slight. The cranial nerves are practically never afflicted.

Anemia is most common and after a period of six months to six years, the terminal stage of short duration is entered when the deep reflexes are abolished and sphincter paralysis appears—some intercurrent trouble terminating the scene. Three stages have been named, characterized by (1) ataxia with slight spasticity, (2) increased spasticity, (3) flaccidity and complete paraplegia. The course varies from one and a half to five years, and is progressively downwards. Prolonged remissions but no recoveries have been observed. Three groups of cases have been noted: (1) those in which pernicious anemia was constantly present; (2) cases in which grave anemia, not of the pernicious type, was at some time present, and (3) cases in which the anemia was a minor and insignificant matter. He then cites sundry cases and reviews the subject, finding no strict conformity to the systemic type of generation. Easily, perhaps, to be confounded with tabes, the later detection of muscular weakness, exaggerated reflexes and Babinski's toe sign will exclude tabes. The absence of sensory symptoms in lateral sclerosis and their invariable presence in spastic paraplegia will exclude these. Friedreich's disease is likewise excluded. Certain types of spinal syphilis are most likely to be confounded here. Prognosis is uniformly bad. The faradic brush, the Pacquelin cautery, warning against fatigue, tonic and hygienic measures, make up the treatment.—JULIUS GRINKER in *Jour. Amer. Med. Ass'n* for April 4, 1908.